

TECHNOLOGY DEPT.

MOTOR TREND

BEST WESTERN
CUSTOMS

see page 38

MAY 1959 35c



PREVIEW: 400 MPH RECORD CAR

GET MORE GO WITH HEADERS!

WHAT DOES DAYTONA PROVE ABOUT THE STOCKS?





"See, I told you Pontiac was the CAR OF THE YEAR!"

"These guys at Motor Trend really know what they're talking about. They test all the new cars. Just like I've been saying, any car that looks as sharp as the new Pontiac, 'moves' like it does, and is such a 'ball' to drive, is bound to be something special."

The selection of the 1959 Pontiac as CAR OF THE YEAR, by Motor Trend Magazine came as no surprise to those who *really know cars*. As the editors said, "Pontiac with Wide-Track Wheels is the best combination of ride, handling, performance and styling of any '59 car."

Pontiac is as much at home at the drive-in as it is at the country club. Whether it's a stick shift

Catalina Coupe, with Tri-Power (three two-barrel carbs) or a Bonneville Vista with the new Tempest 420E economy engine, Pontiac is ready to show new pride and new performance unavailable in any other car.

And every Pontiac is built to handle this great performance. Its Wide-Track Wheel design moves the wheels five (5) inches farther apart for better balance and stability. This widens the stance, not the car. Gives it a safer, steadier grip on the road that no narrow track car can match.

Stop by your nearest authorized Pontiac dealer soon and put this great new car through its paces.

PONTIAC! America's Number ① Road Car!

PONTIAC MOTOR DIVISION • GENERAL MOTORS CORPORATION



To i
CH
A
[NATIO

...if
next

THIS
ha
lar m
takes
ing s
tion.
album
them
the i
above
40%
memb
the Cl
you
manu
tised
album

Ma
Stud

32. I
hit tur
berg -
Rodger

MARI
AND

SPIR

54. G
collecti
reissue
Twenty

HUGO

73. TH
LOVE
Only
for You

THE GO
BENNY

92. OR
cording
greatest
Krupa,

96. SW
TEEN
Brother
great

To introduce you to THE RCA VICTOR POPULAR ALBUM CLUB

CHOOSE FROM 42 ALBUMS

ANY FIVE for only \$3.98

[NATIONALLY ADVERTISED PRICES TOTAL UP TO \$24.90]

...if you agree to buy five albums from the Club during the next twelve months from at least 100 to made available

This new plan enables you to have on tap a variety of popular music... and, once and for all, takes bewilderment out of building such a well-balanced collection. You pay far less for albums this way than if you buy them haphazardly. For example, the introductory offer described above can represent as much as a 40% saving in your first year of membership. Thereafter, through the Club's Record-Dividend Plan, you save almost 33% of the manufacturer's nationally advertised price. After buying the five albums called for in this offer, you

will receive a free 12-inch 33 1/2 R.P.M. album, with a nationally advertised price of at least \$3.98, for every two albums purchased from the Club. A wide choice of RCA VICTOR albums will be described each month. One will be singled out as the album-of-the-month. If you want it, you do nothing. It will come to you automatically. If you prefer an alternate—or nothing at all—you can make your wishes known on a form always provided. You pay the nationally advertised price—usually \$3.98, at times \$4.98 (plus a small charge for postage and handling).

ALL ALBUMS ARE 12-INCH 33 1/2 R. P. M.



1. FOLK SONGS. spirituals, blues, calypso: Scarle Ribbon, others.



2. MELACHRINO plays Tenderly, Diane, Charmaine, Too Young, others.



3. RODGERS AND HAMMERSTEIN'S score sung by Merrill and Munsell.



5. ORIGINAL SOUNDTRACK Rodgers - Hammerstein hit; 15 favorites.



7. LA MAC KENZIE sings ballads: Stranger in Paradise, 11 others.



8. MUSIC FOR RELAXATION Melachrino's Star Dust, Autumn Leaves, etc.



11. COMO'S GOLDEN RECORDS 14 million sellers. Temptation, others.



16. ORIGINAL SOUNDTRACK Gwen Verdon, Tab Hunter, Walston.



20. THE KING PLAYS SOME ACES 12 of Cugat's biggest hits in hi fi.



25. FORTY TOP STANDARDS Show tunes in dancy, supper-club style.



28. BING CROSBY on a jazz lark with Bob Scobey and his all-stars.



30. LERNER AND LOEWIE (writers of My Fair Lady); hit film score.



45. GLENN MILLER Original versions of In the Mood, Kalamazoo, others.



46. LULLABY OF BIRDLAND 12 different versions of the jazz classic.



48. TOMMY DORSEY with Sinatra. Song of India, Star Dust, Marie, others.



53. ALL-TIME favorites by concert orchestra. Jalousie, Malaguena, others.



62. ARMSTRONG, Basie, Dodds, Ellington, Waller, Hampton, others.



64. FATS WALLER plays, sings 12 of his best: Two Sleepy People, etc.



67. INSPIRATIONAL SONGS of all faiths: Ave Maria and eleven others.



70. ROUSING PIPES, drums, band of the Black Watch in highest fi.



79. THE DRUM SUITE Modern jazz score by Manny Albam, Ernie Wilkins.



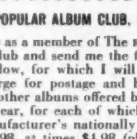
83. ARTIE SHAW'S two best bands. Begin the Beguine, Star Dust, etc.



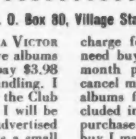
87. A MUST for jazz collectors; Armstrong, Teagarden, Hackett.



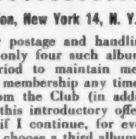
90. FIERY bull-ring music by Torroba and the Pasodoble Band of Madrid.



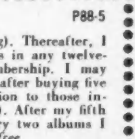
95. THINKING OF YOU Eddie's biggest hits. Wish You Were Here, etc.



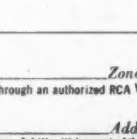
101. 1940 - 1942 BAND Take the "A" Train, Perdido, Cotton Tail, others.



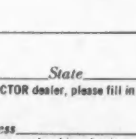
102. JIM BACKUS (Mago) in a series of hilarious antics in ultra hi fi.



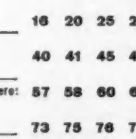
103. 1940 - 1942 BAND Take the "A" Train, Perdido, Cotton Tail, others.



104. JIM BACKUS (Mago) in a series of hilarious antics in ultra hi fi.



105. JIM BACKUS (Mago) in a series of hilarious antics in ultra hi fi.



106. JIM BACKUS (Mago) in a series of hilarious antics in ultra hi fi.



107. JIM BACKUS (Mago) in a series of hilarious antics in ultra hi fi.

THE RCA VICTOR POPULAR ALBUM CLUB, P. O. Box 80, Village Station, New York 14, N. Y.

P88-5

Please register me as a member of The RCA VICTOR Popular Album Club and send me the five albums I have circled below, for which I will pay \$3.98 plus a small charge for postage and handling. I agree to buy five other albums offered by the Club within the next year, for each of which I will be billed at the manufacturer's nationally advertised price: usually \$3.98, at times \$4.98 (plus a small

charge for postage and handling). Thereafter, I need buy only four such albums in any twelve-month period to maintain membership. I may cancel my membership any time after buying five albums from the Club (in addition to those included in this introductory offer). After my fifth purchase, if I continue, for every two albums I buy I may choose a third album free.

Name _____ 1 2 3 5 7 8 11

Address _____ 16 20 25 28 30 32 33

City _____ Zone _____ State _____ 40 41 45 46 48 53 54

If you wish to enroll through an authorized RCA VICTOR dealer, please fill in here: 57 58 60 62 64 67 70

Dealer _____ Address _____ 73 75 76 77 79 83 87

Send no money. A bill will be sent. Albums can be shipped only to U. S., its territories and Canada. Albums for Canadian members are made in Canada, and are shipped duty free from Ontario. 90 92 94 95 96 100 101



QUIETUNE
your engine with



Kendall SuperB keeps engines operating as quietly and lively as when new. It reduces wear and need of repair . . . cuts oil and gas consumption. Refined with pride from the choicest Pennsylvania Crude Oil — nature's miracle molecule at its best.

Ask your favorite dealer for it

KENDALL REFINING COMPANY • BRADFORD, PENNSYLVANIA
1859—CELEBRATING A CENTURY OF OIL INDUSTRY PROGRESS—1959

4 MOTOR TREND/MAY 1959

MAY, 1959

EDITOR

Walter A. Woron

EDITORIAL STAFF

Managing Editor—Erwin M. Rosen
Detroit Editor—W. C. Callahan
Technical Editor—Charles Nerpel
Associate Editors—Wayne Thoms
Len Griffing
New York Editor—Steve DaCosta
Editorial Assistant—R. M. Yamazaki

ART DEPARTMENT

Director—Albert H. Isaacs
Assistant—J. Bryce Gillespie
Production—Y. Hull, M. Donnell

PHOTOGRAPHERS

Chief—Robert D'Olive
Alfred Palacy, Colin Creitz
E. Pat Brollier

CONTRIBUTING EDITORS

Classics—Robert J. Gottlieb
Customs—George Burris
Engineering—John Booth
Racing—Sam Hanks
Technical Advisor—D. H. Moreton

OVERSEAS REPRESENTATIVES

European Editor—Gordon Wilkins
Germany—Günther Molter
Italy—Johnny Lurani

ADVERTISING

Director—A. M. Benedict
Manager—Jim Long
Production—Jack Preston, Dick Jones

BUSINESS STAFF

General Manager—Lee O. Ryan
Business Manager—T. A. Johnson
Circulation Manager—Gordon Behn
Credit Manager—Robert A. Nylund

PUBLISHER

R. E. Petersen



MOTOR TREND, U.S. copyright 1959 by Petersen Publishing Co., 5959 Hollywood Blvd., Los Angeles 28, Phone Hollywood 2-3261. Second-class postage paid at Los Angeles, California, and at additional mailing offices. Published monthly.

SUBSCRIPTION RATE: \$3.50 per year; 2 years \$6.00. Above rates for U.S., its possessions, Canada; all other countries: one year—\$4.50; 2 years—\$8.00. Single copy 35c. On sale at newsstands throughout the country.

CHANGE OF ADDRESS: Three weeks' notice is required. When requesting a change, please name magazine and either furnish an address imprint from a recent issue, or state exactly how label is addressed. Change cannot be made without the old as well as the new address.

ADVERTISING: Los Angeles office—5959 Hollywood Blvd., Los Angeles 28. Detroit office—738 Book Bldg., Detroit 26. Phone Woodward 3-8245. Chicago office—360 N. Michigan Ave., Chicago 1. Phone Franklin 2-6067. Cleveland office—834 Schofield Bldg., Cleveland 15. Phone Main 1-1139. Eastern office—17 E. 48th St., New York 17. Phone Plaza 1-6690. Closes 25th of 3rd month preceding publication. (See SRDS.)

CONTRIBUTIONS: Should be mailed to 5959 Hollywood Blvd., Los Angeles 28. They must be accompanied by return postage and we assume no responsibility for loss or damage thereto. Any material accepted is subject to such revision as is necessary in our sole discretion to meet the requirements of this publication. Upon acceptance, payment will be made at our current rate, which covers all author's and/or contributor's right, title, and interest in and to the material mailed including but not limited to photos, drawings, charts and designs, which shall be considered as text. The act of mailing a manuscript and/or material shall constitute an express warranty by the contributor that the material is original and in no way an infringement upon the rights of others.

Printed in U.S.A. by Pacific Press Inc., Los Angeles.

NEXT MONTH

Test of sensational 160-mph Bocar sportscar . . . Getting More Go with multiple carburetion . . . Announcement of first winners in Project Ideas Contest . . . Plus six road tests . . . More Product Use Tests . . .

imp

te

depar

MOTOR TREND



THE COVER:

Customizing at its best is exemplified by this Corvette, acclaimed as National Champion in the Competition Sports-car Class at the Oakland National Roadster Show. Bob McNulty rebuilt car, owned by Bob Moreira. Photos by George Barris.

CONTENTS

"The Voice of the Motoring Public... campaigning for better and safer cars"

special	WHAT DOES DAYTONA PROVE ABOUT THE STOCKS?	20
	How did your car rate in top speed, acceleration, economy?	
	GETTING MORE GO—WITH HEADERS	26
	The first step in modification—improving exhaust system	
	DESIGN ENGINEERING—THE FUTURE IS NOW!	30
	Modern engineering makes "dream highway" out of any road	
news	THE RUMOR MILL	8
	SPOTLIGHT ON DETROIT	11
	Trans-axles for 1960? Gas turbines make progress	
	DETROIT'S SMALLER CARS	12
	What to expect if and when they are finally introduced	
	AROUND THE WORLD IN 30 DAYS	17
	DETROIT'S LATEST DREAMS	24
	Cadillac Cyclone and Oldsmobile F-88 III unveiled at Daytona	
	FORMULA 1 CHALLENGE BY REVENTLOW	50
	MT PREVIEWS THE NEW CARS	55
driving impressions	SMOOTH AND LIVELY—THE NEW FIAT 1800	18
	MG MAGNETTE: 82 MPH FROM 68 HORSES	54
	TURNER: SHY ON LOOKS, BUT A REAL GOER!	56
	MORETTI: FALLS SHORT OF \$2995 VALUE	64
general	ARE YOU BEING BRAINWASHED BY YOUR CAR?	68
	ONE-LITER MOVING VAN	72
new product section	TRENDS IN NEW PRODUCTS	59
	PAXTON SUPERCHARGER USE TEST	60
	MITYMITE BATTERY CHARGER USE TEST	61
	DRI-POWR USE TEST	61
	LOAD LIFTER HELPER SPRINGS USE TEST	62
	CAR-SKIN WAX USE TEST	62
customs	ATOMIUM MARK X	14
	SHOWPIECE CUSTOMS	40
classics	CLASSIC CUSTOM—BENTLEY-DUESENBERG-MORGAN	46
technical	OUT TO BREAK 400 MPH!	34
	POTENT PORSCHE	48
	PERFORMANCE/ECONOMY CHART OF '59 CARS	76
humor	THE DETROIT LOOK	79
departments	LETTERS	6
	SELL 'N' SWAP ADS	84

SAM HANKS, 1957 Indianapolis Winner, says:

"I'd like a NATIONAL SCHOOLS trained mechanic on my crew... any employer would!"

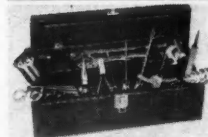
Sam Hanks holds American Closed Course record (192.5 M.P.H.); also many state and national racing titles.



MASTER ALL ENGINES
AT HOME IN YOUR SPARE TIME
NATIONAL SCHOOLS
AUTO MECHANICS & DIESEL COURSE
INCLUDING FUEL INJECTION

"I've worked alongside National Schools-trained mechanics," reports Sam Hanks. "They're tops, because they get all-around training, and they know how to repair fast and right the first time. No wonder National Schools graduates command top pay."

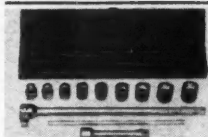
YOU GET AND KEEP ALL THIS EQUIPMENT



Complete set of professional tools and All-Metal Tool Box. Same top-quality equipment used by expert mechanics everywhere. Use them, display them proudly.



"Motor Analyzing Set" contains Standard Engine Vacuum Fuel Pump Tester, Remote Starter Switch, Modern Timing Light, Standard Compression Tester. Plus compact carrying case & instructions.



Top-quality Socket Wrench with Fittings. Real professional tools you'll use during your lifetime career in repairing all types of engines, from foreign cars to big diesel jobs.

COURSE COVERS: all engines, fuel injection, automatic transmissions, overhauling, customizing, servicing and maintenance.

PREPARES YOU FOR: auto mechanic jobs, airplane mechanics, farm machinery repair, all diesel jobs, experimental labs, government work, engine specialist and all-around mechanic.

Earn as you learn men! We'll show you how. Streamlined lessons, diagrams, manuals, latest equipment, practical methods prepare you for hundreds of jobs in scores of industries. Free Placement Assistance.



RESIDENT TRAINING AT LOS ANGELES! If you wish to take Resident Training at Los Angeles, in our big, modern Shops & Labs, check special box in coupon for full information.

APPROVED FOR GI TRAINING
NATIONAL SCHOOLS
Los Angeles 37, California

NATIONAL SCHOOLS

TECHNICAL TRADE TRAINING SINCE 1905
LOS ANGELES 37, CALIFORNIA

MAIL NOW TO NATIONAL SCHOOLS
Dept. DW-59, 4000 S. Figueroa St.
Los Angeles 37, Calif.

Send for: FREE Auto Diesel Opportunity Book and Sample Lesson

NAME _____ AGE _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

☐ Check if interested ONLY in Resident School Training at Los Angeles
VETERANS: Give date of discharge _____



for
STREET
or
FREEWAY
DRIVING
for
BUSINESS
or
PLEASURE

**MOTOR TREND
AWARDS SEAL OF
APPROVAL**

3.2 more
MILES PER
GALLON

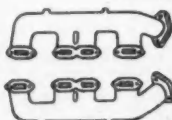
were obtained under ordinary
street driving conditions.
More efficient gasoline usage
means less Smog-producing fumes.

**FASTER ACCELERATION
FOR TRAFFIC SAFETY**

when you need that extra spurt
of speed for passing or to
avoid an accident.

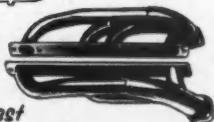
Tests show 1 1/2 second gain
from 0 to 60 miles per hour.

**BOLTS ON IN
30 MINUTES**



TAKE OFF
OLD STOCK
EXHAUST
MANIFOLDS

**BOLT ON
HEDMAN
HEDDERS**

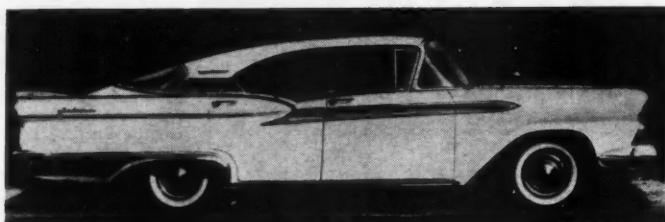


*The Largest
Improvement for the
Smallest Investment*
SEE YOUR DEALER TODAY!
FOR FURTHER INFORMATION
Write for FREE CATALOG

HEDMAN

Muffler & Mfg. Co.
11039-49 W. Washington Blvd.
Culver City 2, California

LETTERS



"SPEEDBACK" SPECIAL

Dear Sir:

Here is an artist's conception of what one
of the low-priced cars might look like if it

made a debut with "speedback" specials.
This is a stock photo that I have retouched.
Buck Martin Kansas City, Mo.

BACK TO OUTER SPACE!

Dear Sir:

I'm afraid you contradict yourself in your
styling critique (March MT). You say, "Why
then, can't cars look like cars? Do they have
to be designed to resemble the mood of the
moment, which happens to be rockets
blasting off into outer space?" Then you
choose Buick as the "best looking car, over-
all."

That "poised-for-flight Delta-winged" Buick
looks as though it came from another planet,
and I'm of the opinion that it should be sent
back there—together with its partner in poor
design, the '59 Chevrolet.

Burt Tankel

Mattapan, Mass.

MATTER OF OPINION

Dear Sir:

Beauty is a matter of personal opinion
and you have a right to yours, but why waste
several pages of an otherwise fine magazine
trying to convince your readers that you are
better judges of beauty than they?

Terry W. Jain

Downey, Calif.

BEST LOOKING?

Dear Sir:

I was appalled at MOTOR TREND's selection
for the best all-around looking 1959
automobile and all the other associated
choices. In my opinion, the selection represented
the most deplorable example of
American art.

Joe A. Dickson

Dearborn, Mich.

GUIDE TO GOOD TASTE

Gentlemen:

At last someone of authority has come
out against "the vulgar display of decoration,"
the "monstrous absurdity" of massive
clusters and creations of chromium in the
past and still smouldering flamboyant period
of American automotive design.

Let us hope that Virgil Exner reads your
page and finally decides to give up his wrong-
way notion of the "dart" or "the upswep
rear fins" as exemplifiers, partners of speed.
G. McCormick New York

WHADDAYA MEAN—WORST BUY?

Gentlemen:

In answer to the letter in the March MT
calling the '59 Chevrolet the worst buy of
the year—just what does Mr. Bishop mean
by worst buy?

I assume he means style-wise, because he
couldn't mean quality, ease of handling, rid-
ing comfort, get-out-and-go, speed, etc.

I drive for the Highway Patrol—and be-
lieve me, that new Chevy has IT in every
department.

As for styling, Chevy leads again—who
wants to spend his hard-earned money for a
warmed-over last year's model—or worse yet,
a warmed-over 1957 model?

G.S.S.

Pottstown, Pa.

CONGRATULATIONS, GENERAL MOTORS!

Dear Mr. Woron:

I personally would like to congratulate
General Motors for their remarkable futur-
istic styling for 1959. Even though you can
easily trace components of the whole line of
cars to something you have seen before, it
is a vast improvement over their 1958 lineup
of "chrome cars."

For 1959 I would award the best-designed
front to Pontiac, and the best-designed back
to Buick. The overall silhouettes of all GM
cars are very beautifully proportioned.

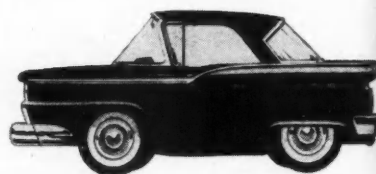
Michael Heiserman

Washington, D.C.

SMALL FORD?

Dear Sir:

One of our design engineers "doodles"
with a lot of things, including car ads. This



sample gave us a few laughs and may do the
same for your readers.

The "designer" of this small car is Henri
A. Brysselbout of York, Pa.
Ben L. Williams York, Pa.

PROOF POSITIVE

Gentlemen:

Quality control on American cars has been
taking a beating in most of the magazines
covering the motor industry. Without doubt,
there has been some extremely sloppy work
from time to time, and a good share has
been in the high-priced bracket.

However, lest we get completely out of
focus on this condition, remember that as-
semblers and even inspectors are human.

My experience over a period of almost
40 years has been a very happy one as far
as cars are concerned. Certainly, there have
been minor adjustments and replacements.

It must be emphasized that a large number
of drivers know *nothing* about their cars!
This, together with the resultant abuse,
proves that the American car is a wondrous
mechanism. It runs in spite of what is known
as "yokel trouble."

Reese Nelson

Phoenix, Ariz.

DON'T BLAME THE CARS!

Dear Sirs:

Today most people are frustrated because
the new cars are so long, low and futuristic

looking. They simply do not realize that today automobiles are designed around futuristic homes and appliances.

Automobile styling has gone so far ahead simply because homes cannot be redesigned every year. If the majority of the people today lived in very modern homes the new cars wouldn't look a bit like jet planes to them.

David Bone

Ashdown, Ark.

IMPROVED APPEARANCE

Dear Sir:

Several months ago I purchased a Rambler station wagon, with which I am very much pleased. However, although the styling was good, I was not particularly happy with the



rear mudguard, which gave the effect of squareness—it did not seem to taper off gracefully.

One day, while observing the '57 Chevrolet four-door mudguard, I got the idea of purchasing the moldings, which seemed to fit the Rambler. I got the clips, drilled the holes and fastened the moldings on to the mudguards.

The total cost was \$14. The improvement in appearance was well worth the expenditure. I. Bromfield

East Boston, Mass.

A CHALLENGE

Gentlemen:

I don't know why people write you about the looks of cars—you don't design them. If these people think they could do better, I would like to see their drawings.

J. Roosenraad

Lansing, Mich.

RESURRECTION

Dear Sirs:

If Henry Kaiser brings back a small-car version of the Willys, I wish he would also bring back the Kaiser. I think the last Kaisers produced were, and still are, one of the most beautiful cars on the road.

Donald White

Methuen, Mass.

KEEP THEM OFF THE ROADS

Dear Sir:

Dr. Walter Alvarez, nationally-known Professor Emeritus of Medicine at the Mayo Foundation, recently commented that illness often causes auto accidents.

Capt. R. C. Blossom of the California Highway Patrol recently spoke of diabetics who, when taking large doses of insulin, can at any moment become woozy. Some persons with heart disease or very high blood pressure or a tendency to mild strokes can suddenly get dizzy or confused, and should not be driving. Some epileptics certainly should not be driving. And many accidents are caused when a person is greatly preoccupied by some anxiety.

In most states a feeble-minded or insane person can have a license to drive. Often a man who has been arrested 20 times for stupid or drunken driving is given back his license. And many people have accidents because they are so stubborn, discourteous or bad-tempered that they will never yield the right-of-way to anyone.

With 40,000 fatalities and two million injured each year, it becomes a *must* to tighten up the laws to get the screwballs, psychos and the too-old drivers off the roads. R. Blagden

East Hampton, Conn.

Stop at the sign of the Smiling Tire



Relax! Drive worry-free on B.F. Goodrich Silvertowns. They're lab-tested, road-tested, time-tested. We do the worrying for you! So have fun. Enjoy trouble-free mileage on the quality tires chosen for new cars year after year. Get top value, get Smileage! 4 tires, \$4 down!

Ouch! This 6" stob tests tire strength. Bruising impact—but no tire failure! Assures greater safety when you drive over curbs, chuckholes, railroad tracks.

B.F. Goodrich Smileage dealers are listed in the Yellow Pages ©The B.F. Goodrich Company

B.F. Goodrich *Smileage dealers*

not too big.....(101" wheelbase)
not too small.....(4 doors)
the new Panhard.....(the "Dyna")
just-right.....(below \$2000.)
for all!.....(the whole family)



The new Dyna Panhard is the only 5-6 passenger sedan that delivers 40 miles per gallon and a speed of 80 miles per hour with a record of over 900 sports car victories!

TEST-DRIVE THE NEW *Dyna* **PANHARD**

CITROEN CARS CORPORATION (Sole Importer and Distributor of Panhard-Levassor, Paris, France)
300 Park Avenue, New York 22, New York • 8423 Wilshire Boulevard, Beverly Hills, California

STEWART-WARNER
gives you

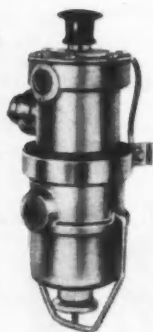
3 big

**MOTORING
EXTRAS!**



Extra Protection With Twin Gauge Panel. Tells more than ordinary "warning lights." Gives rate of current flow . . . helps prevent overcharging or discharging of battery. Tells exact oil pressure . . . helps assure safe engine performance. Only \$9.90.

Extra Performance
With Electric Fuel Pump. Gives instant starts . . . delivers steady flow of gasoline. Ends vapor lock due to abrupt temperature changes. Eliminates stalling due to surging or over-pressure. Ideal for high compression motors. Only \$39.95.



Extra Economy

With dependable Motor Minder. A must for every driver who wants top mileage per gallon of gas. Helps avoid costly repair bills by giving constant check on condition of spark plugs, carburetor, rings, valves, timing, etc. Pays for itself in savings. Easy to install. Only \$12.05.

Get these motoring extras at your car dealer, service station, garage or automotive parts store.



Dept. AI-99, 1840 Diversey Parkway, Chicago 14, Ill.

8 MOTOR TREND/MAY 1959

THE RUMOR MILL



"Checker's new taxi will soon be made as a car for public sale."

WE WONDER—As we went to press we were trying to get confirmation on an announcement that the Checker Cab Co. supposedly made to the effect that their new car would be introduced at the New York Imported Car Show in April. Checker Cab officials were unavailable for comment. There have been so many false starts on this one for over a year that we'll have to see a number of Checker cars running around the streets before we'll believe it.

"Fins are on their way out for 1960."

NOT ENTIRELY TRUE—Though at least one, and possibly two, GM lines will be finless in 1960, it is likely that fins will remain fashionable for some time to come—particularly on the new Chrysler products.

"GM will offer trans-axes in all its 1960 lines."

FALSE—This is the second time around for this one in the past six months. The trans-axle (combining transmission and rear axle as virtually one unit) would eliminate transmission and driveline humps, but is still being tested. Its use may be limited only to Cadillac.

"The classic Cord radiator of yesterday which many referred to as the 'coffin-nosed Cord' will be revived in one 1960 design."

PROBABLY TRUE—But 1960 designs are still open to change so far as grilles are concerned. In any case, the design would only be similar in concept to the famous Cord.

"The 1960 Corvette by Chevrolet will have a steel body rather than the fiberglass one used since its introduction."

FALSE—This yarn is strictly from Mother Goose and doesn't have a wing to fly on. Best dope here is that the glass Corvette will be continued next year and perhaps beyond then.

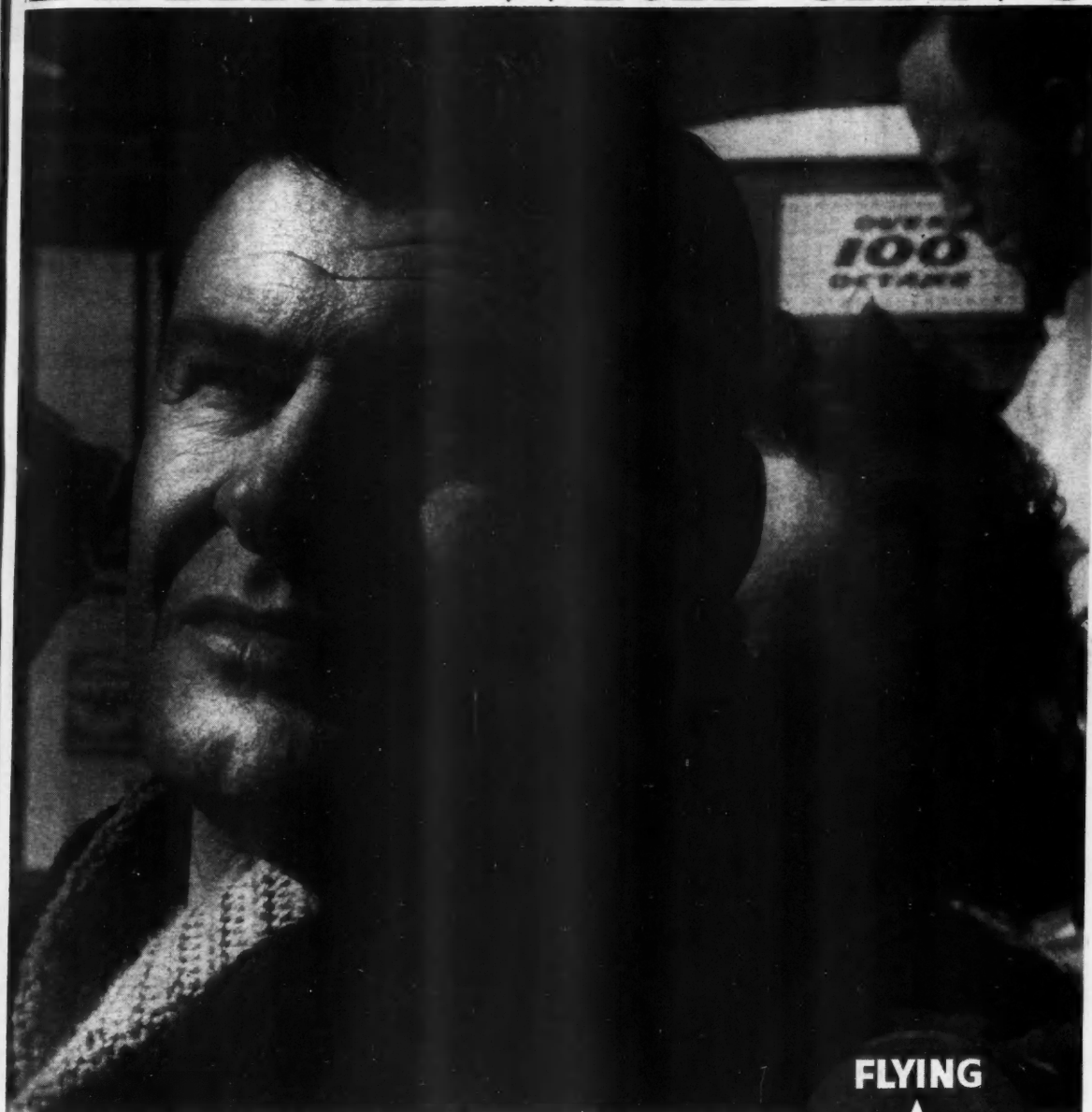
"Despite factory advertising claims that 1959 car finishes do not require waxing or polishing, the finishes will dull if no wax or polish is applied."

TRUE—According to Chemical Specialties Manufacturers Assn., the new finishes will dull when exposed to sun and humidity—but at a slower rate. They also point out that cleaners will be needed to dissolve bug stains, tree sap, bird droppings and factory and road grime. For this reason they say wax and polish still is needed and is recommended in factory owner maintenance manuals.

"The present A-arm type independent front wheel suspension is on the way out, and the industry will go back to solid front axles."

PROBABLY TRUE—But not in the immediate future. A solid axle front and rear in a new type suspension, such as used on the Firebird III, will probably be adopted before too long on production models. It is doubtful that this will be done until air-oil systems have been developed to a point where they can be maintained by the average service facility.

A man with drive



gets Flying A



There's more in it: (1) Highest octane for more power.
(2) The only gasoline over 100-octane that doesn't cost you extra.
(3) Clean burning—the cleanest ever refined! (4) Never a knock in any engine.

Reason: Flying A comes from the most modern refinery in the world.

TIDEWATER OIL, THE "FLYING A" COMPANY—FORMERLY TYDOL
MOTOR TREND/MAY 1959 9

What kind of a car do you want, exactly? Chevrolet has a choice of nine engines, five transmissions, two suspension systems, regular or Positraction rear axles, special cams, solid or hydraulic valve lifters, two air-conditioning systems, even Fuel Injection—the list of extra-cost options is tremendous. But what it means is that you can virtually design your own car, tailored precisely to your needs. Here's just one example:

"I 'built' my Chevy for top economy—and extra easy running at 300 miles a day"



"As a traveling salesman with a big Midwest territory I rack off about 300 miles a day—and, boy, how I love gas economy. But I like all the comfort I can get, too, so I'll be rested when I make my next call.

"I used to wish I could design my own car, until this year. That's when my on-the-ball dealer friend showed me how I could 'build' just the right car out of Chevy's terrific list of options. Look what I got:

"I picked a Biscayne two-door, 'cause I pay for my own auto and that's right at the base of the price list. A Hi-Thrift 6 engine—that's the world's best workhorse. And Over-

drive; with that high ratio you can just whisper down the road at good fast cruising speeds. No fuss, no strain, hour after hour. And that gas needle just *never* seems to go down!

"Then I pampered myself a little bit. Foam rubber padding in the seats (I'm a big guy and I spend hours at the wheel); Chevy's new throttle-holder where you just set your cruising speed for those long straights and the car holds it while

you rest your right foot. And the big 'fresh-air' heater, too—the winters get real rough in my country and, besides, that air coming in from the outside keeps you alert on the real long hops. Man, you should drive my car. It fits me like a glove!"

There's something to figure on, friends. Whatever kind of car you want—sports car, salesman's car, town car—you can "design" it for yourself. We aim to produce cars for *any* taste and *any* kind of use. But check your Chevrolet dealer and see how you can suit yourself to a T. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.



SPOTLIGHT

ON

DETROIT



SMALL CARS ARE STILL THE BIGGEST

TOPIC OF DISCUSSION

What happens is that one person gives out a bit of information as bait, hoping to entice another one to elaborate on it—or disagree with it. The modus operandi seems to be one based on the saying that, "If you don't hear a rumor by 10 o'clock, start one." Cutting through all the cobwebs and coming up with positive facts at this stage of the game is not easy. Those who claim they have "all the facts" are for the most part boasting about something they cannot have. The info we can give you as of presstime is on the following pages.

TRANS-AXLES FOR 1960

This seems more and more a certainty for 1960. Among those considering the coupling of transmissions to rear axles are Oldsmobile, Pontiac, Buick and Cadillac. Furthest progress seems to have been made by Buick, who have reportedly set up an experimental line for assembly of the trans-axles. Their new triple-turbine transmission could actually go front or rear, for the case has been redesigned to eliminate the hump on the front floor. Cadillac will probably use the transmission at the rear, as in their Cyclone dream car (see page 24). If Cadillac goes for this in 1960, Pontiac and Olds are almost sure to follow, for they'll all use the same, redesigned, wider and shorter Hydra-Matic transmission cases. In any event, the transmission hump and driveshaft tunnel appear on the way out.

MORE UNITIZED BODIES

There's good reason to believe that integral body-chassis units will appear on more than just Chrysler's new small car. They may appear full across the line.

PROGRESS ON GAS TURBINES

What may be a quiet way of testing gas turbines in everyday use is Allison's recent disclosure that the new General Motors 225-hp gas turbine engine is available for military and commercial use. Prototypes have already been ordered by several equipment manufacturers.

TWO DODGES FOR '60?

Rumor is rife that Dodge will have two cars for 1960, one on a 118-120-in. wheelbase, the other on 114 in. Their new cars are involved in a whole new marketing philosophy being attributed to Chrysler top brass.

MORE ON ELECTRIC CARS

Last month we reported that some big companies were dealing with electric car programs. Cleveland Vehicle Co., formed four years ago to develop an electric van, is also reported to be working with American Motors and Electric Storage Battery Co. on a project to produce an experimental electric-powered Rambler. A prototype may be running by the time you read this.

WHAT TO DO WITH FINS

A bit of advice given to students of the Society of Automotive Engineers by Zora Arkus-Duntov (Chevrolet Special Design Section) could just as well be passed on to many Detroit manufacturers (including his own company). Duntov called fins as phony as fine feathers on a fence post when it comes to their contributing to directional stability. He outlined the following factors as contributing to better handling and control: weight distribution, balance, center of gravity, good steering geometry. Further he urged students to work on these instead of wasting effort on directional rudders.

PROXIMITY WARNING DEVICE COMING

Cadillac's new dream car, the Cyclone (see page 24) has a feature you may see built into cars in 1960 or 1961. It has an experimental proximity warning device that works on radar principle: two 10-in. aluminum reflectors are mounted behind the nose cones about four feet apart, with transmitter and receiver set in the front fenders. Transmitter sends out waves that bounce back from any solid object ahead. As distance closes, warning device will develop greater light intensity or louder sound (depending on type of warning device used).

DESPITE TEMPORIZING PHRASES such as "... barring changes in the market or other circumstances..." the Ford Motor Co. will introduce a smaller car this fall. Chrysler has made the statement that its decision to build a smaller car would not be made "until late summer." General Motors has reiterated its position that "We will not enter the smaller car field until we are convinced that the demand has become permanent and profitable." From these statements, you're safe to make an odds-on bet that smaller cars are on the way from Detroit.

Admissions by Chrysler and Ford confirm that the smaller car has moved from the project stage to the program stage. It is now only a question of "what" the new cars will be and "when" they will appear.

Car makers are convinced that they cannot woo American buyers away from imports with cars that are equal in austerity, inadequate passenger space, instrumentation, limited luggage capacity and relatively lower and noisier performance, purely

on the plea that products are home-grown, though higher priced (in many instances) than imports.

To meet the challenge of the small foreign car, the Big Three must come up with tastefully-styled cars that offer good interior comfort and appointments. They must couple high operating economy with good performance and handling characteristics. They must provide generous luggage space, full instrumentation and offer automatic transmissions as an option. And they must have high quality workmanship and materials.

When these lines will appear is still a moot question. Some rumors persist that the smaller Chevrolet will make its debut as early as August or September. This would not seem too realistic as the industry at that time is in the height of a 1959 model closeout season; it would seem rather poor merchandising to enter a smaller car in competition with close-outs. It would appear to be more reasonable to peg the first model out in October or November.

DETROIT'S SMALLER CARS:



CHEVROLET SMALL CAR ILLUSTRATION BY BILL MOTTA

Th
ber, a
ler p
1, 19
be in

THER
small
Divis
using
will
Olds
by w
lines
used
on a
sched

are a
used
Th
availa
later.
car, o
throug

CHEV
zontal
displa
minun
the n
when
well a
chassis
a uni
only a

Bec
in the
in fro
and w
CHRY

priced
e Big
good
high
charac-
ill in-
ption.
erials.
Some
debut
n too
1959
andis-
uts. It
el out

The new Ford is due out some time in November or December, according to reliable reports. As presently set up, the Chrysler program calls for 20 completed smaller cars by January 1, 1960; there is no indication that a "crash" program will be instituted to advance that date.

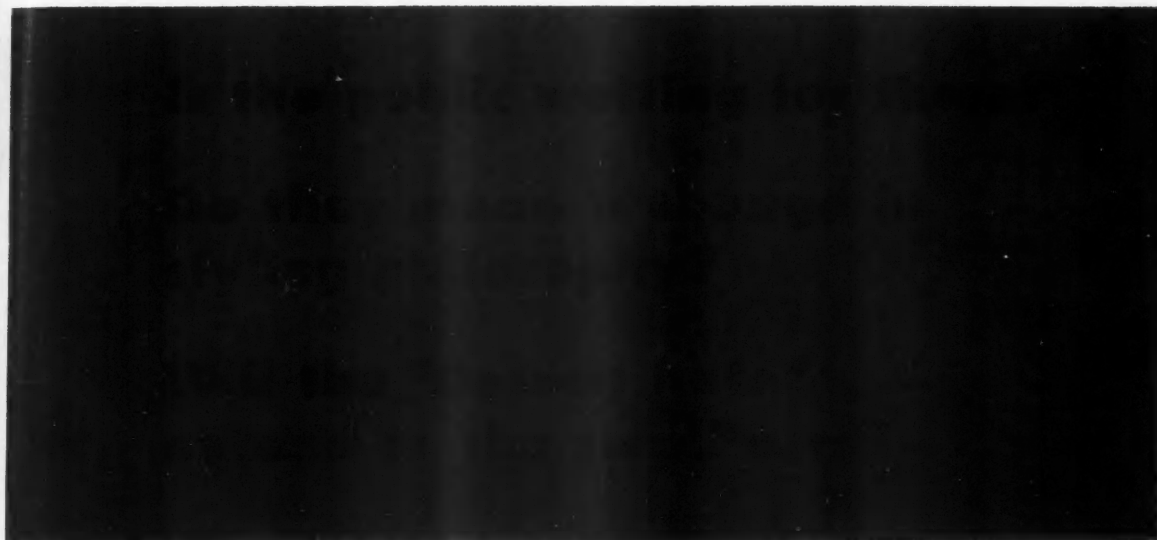
THERE IS STRONG REASON to put credence in the rumors that smaller car offerings will not be limited to Chevrolet, Ford Division and Plymouth. Other versions of the smaller cars, using the same basic body shells but individualized styling, will be made available in the case of GM through its Buick, Olds and Pontiac dealers. This is supported to some extent by workers at the Buick Flint, Mich. plant who claim pilot lines have been established in Plant No. 29, which is usually used for experimental work. This line, they say, is working on a smaller aluminum engine and word is that 60 units are scheduled for production by September 1. While no details

of unit construction. Its front-mounted engine is an overhead six, with aluminum block and wet sleeves. Displacement is around 170 cu. ins. and horsepower is between 90 and 100. Only a four-door sedan appears to be in the works.

L. L. Colbert, Chrysler president, has said that the new car would give 25 mpg but would save the buyer only \$100-150 over the cheapest Plymouth.

FORD, it is said, will be on a 109-in. wheelbase and will have unitized construction à la Lincoln and Thunderbird. It will be powered by a cast iron overhead-valve, six-cylinder engine. Displacement and horsepower are around 144 cu. ins. and 86, respectively. Ford may have both two-door and four-door sedans.

The other model, to be offered later through Mercury, Edsel and Lincoln dealers, will be on a longer (114-in.) wheelbase and may be given the Edsel name in 1961. It will be styled differently from the Ford small car.



by Bill Callchan, Detroit Editor

are available regarding the engine, workers say it will be used in a smaller Buick somewhat larger than the Opel.

The Chrysler smaller car, it is understood, will also be made available through Dodge dealers at first and DeSoto dealers later. Ford also is reported to have two versions of its smaller car, one to be marketed through Ford dealers and the other through Mercury, Edsel and Lincoln dealers.

CHEVROLET, according to persistent rumor, will have a horizontally-opposed six-cylinder aluminum engine of 141-cu.-in. displacement. The block will be of high silicon content aluminum alloy and will *not* use steel sleeves. It will develop in the neighborhood of 92 hp, but may go as high as 100 hp when coupled with an automatic transmission (to be announced well after the first models come out). It will have the normal chassis and body, mounted on a 108-in. wheelbase, though a unit-body car also is in the planning stage. For the present, only a rear-engine four-door sedan is planned.

Because of its design, the same basic body shell can be used in the Buick-Olds-Pontiac smaller cars, with engine mounted in front. These cars will probably be tabbed as 1961 models and will not be out until 1960.

CHRYSLER'S SMALL CAR is said to have a 106-in. wheelbase,

THE SWITCH TO UNIT CONSTRUCTION would mean quite a change from present production methods, but all companies concerned have good backgrounds in this method of construction. Chrysler and DeSoto Airflow models of 1934-'35 had integral bodies and frames. Ford Thunderbird and Lincoln now use it and General Motors has used it abroad.

WE CAN EXPECT THE SMALLER CARS to be larger than most people expect at present. The misnomer, of course, is "small car." The cars will not be *small*, as pointed out previously; they will be *smaller than present models* and in keeping with the current Ramblers and Larks. The Lark, with a wheelbase of 108.5 ins., has an overall length of 175 ins., which is 16 ins. shorter than the Rambler Six on the same wheelbase. The Rambler American has a wheelbase of 100 ins., yet is three ins. longer overall than the Lark.

The reason for sticking to similar sizes is obvious when you study sales reports of current cars (up in almost all cases over 1958). This improvement is expected to continue and can be interpreted in at least one of two ways: Either buyers are discounting the reports of the smaller cars to come; or, there is less basic interest in smaller cars on the part of buyers than there is on the part of those who write about them. /MY

ATOMIUM MARK X



"NOT ANOTHER ATTEMPT TO BE DIFFERENT, BUT A PROTEST TO DETROIT STYLING"

THE COMPULSION to be different is meaningless unless the results serve a functional purpose. This is where many car customizers lose contact with reality; unfortunately it's where Detroit stylists lose it on occasion, too. Is there really a need or an excuse for an automobile to be disguised as a space ship?

This orientation led to the development of the Atomium Mark X by Leighton A. Wilkie, Chairman of the Board of the DoAll Co., after he could not find an

American car in *any* price range that compared with the standards of design he demanded from his own engineering staff.

To Leighton, price was meaningful only when evaluated against usable life, reliability and service; and no mechanical feature is desirable if it impairs the function of another necessary part, regardless of novelty appeal.

Human engineering should govern the design, with appearance the expression of function. Nothing that interferes with op-

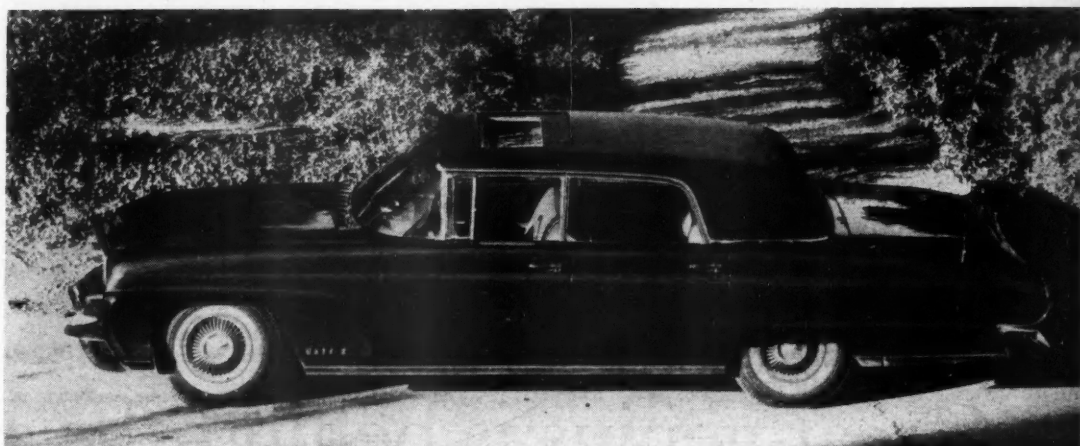
eration or violates good taste is tolerable to the theme of practical function.

Thus, Leighton Wilkie's Continental was brought from Santa Barbara to Chicago to be "made rational." This in itself is noteworthy, since most custom-bound cars go from east to west.

His family shares his views. His wife and son drive altered T-Birds, his daughter a VW that looks like a small Mercedes—and even the gardener drives a highly individualistic Buick.



No fins or other extraneous ornamentation detracts from the functional lines. Instead of two antennae for one radio, Leighton Wilkie uses one antenna for both the radio and the radio-telephone. A switch on the dash operates through a relay to select either set.



German-made Gold's sunroof is there because it works. It is operated electrically by motor in luggage compartment.



Atomium Mark X has clean, uncluttered lines inspired by the industrial exhibits of the Brussels' World Fair—hence, the Atomium hood ornament. Chassis is stock '58 Lincoln Continental; body has been reworked by Customs By Carston in suburb of Chicago.



Great genius is behind the Prinz

Yes, the great power behind the exciting Prinz is this famous NSU, German-engineered, rear motor. It gives you the most trouble-free 70 miles an hour in the world, up to 50 economical miles per gallon. And you get every great design feature for pace-setting performance, too. Independent wheel suspension! Four-gear shift! Snappy acceleration! Superb road-holding! The vision in this joyful car is remarkable. So come see what's behind all the excitement about the Prinz. Get behind the wheel today!



PRINZ
by NSU

FROM
\$1398

P.O.E. NEW YORK/HIGHER WEST COAST/U.S. IMPORTER: **FADEX COMMERCIAL CORPORATION**
Executive offices and showroom, 487 Park Avenue, Dept. MT5, New York 22, New York. Dealers from coast to coast.
Overseas delivery arranged for your European pleasure. Write for literature and address of your nearest dealer.

IT
Fe
Se
of
to
Fi
exp
U.

SW
BP
of
st.

EN
Co
sa
car
con
Bel
Hil
day

...
Ast
St
new
by
rep
Cam
rec
tou
Jag
new
as
lon
has
Enf
100
Eng
far
per
Cli
a f
the
mar
wit
mot
tha
Fer
kep
dri

GER
Vol
fro

AROUND THE WORLD IN 30 DAYS

A monthly summary
of the latest foreign car news
from our overseas correspondents

ITALY

Ferrari may not be able to run at Sebring. Race regs demand one brand of fuel, and Ferrari has a contract to use another brand exclusively... Fiat is about to launch a big, expensive publicity campaign in the U.S....

SWEDEN

BP are experimenting with a number of coin-operated self-service gas stations...

ENGLAND

Colin Chapman is having a clearance sale, including five '58 works team cars...Two gals drove a Hillman Minx continuously over 15,534 miles of Belgian cobblestones to prove that Hillmans hold together. It took 22 days for an average speed of 41 mph...Masten Gregory has signed with Aston Martin for the '59 season... Stirling Moss has test-driven the newest of the Lister-Jaguars entered by Briggs Cunningham at Sebring at a reported 203 mph...Austin A-55 Cambridge is the latest BMC car to receive the Pinin Farina styling touch...As the race drew near, Jaguar still hoped to ready their newest E-type in time for Sebring, as Alec Ulmann held entries open as long as possible...The 500cc Berkeley has been superseded by a 692cc Royal Enfield 50-hp version capable of over 100 mph. Body is all new, too... English Ford have made their interiors far more luxurious...John Cooper's personal transportation is a Coventry Climax-powered Dauphine. Seems he has a family that needs the room and wants the zip...Traction Electric Co. is marketing an electrically-powered TEL, with lightweight batteries driving a motor on the rear axle...Rumor has it that Tony Brooks will drive for Ferrari and that Tony Vandervell has kept one Vanwall for Stirling to drive...

GERMANY

Volkswagen will borrow \$35 million from German banks to finance

production expansion. Beetle output has been increasing about 20% per year for the past several years. Also, don't be surprised if a bigger 1500cc model answers the challenge of Big Three small cars...Borgward will not race Formula I during the '59 season.

UNITED STATES

This year's Mobilgas Economy Run will be more meaningful. All results will be tabulated in miles per gallon. Reports have it that all of the 40 entries are having trouble getting good-sounding averages...

AFRICA

A Mercedes-Benz 180-D (diesel) driven by Karl Kling won the 4th Annual Africa Rally, 8700 miles with almost no roads..."What are you doing standing on the corner?" "I'm waiting for the bank to go by!" The Standard Bank of South Africa has put a bank-building body on a 2/3-ton chassis to service outlying jungle areas. Wonder who the customers are...?

BEHIND THE IRON CURTAIN

In the face of stiff sales resistance, Detroit might well think their Russian counterparts have it made. So many Russians want the few available cars that the government has to ration them...At the Leipzig show the Russians showed a Tschaika, which looks a lot like the Cadillac, that had a gold-plated grille...

JAPAN

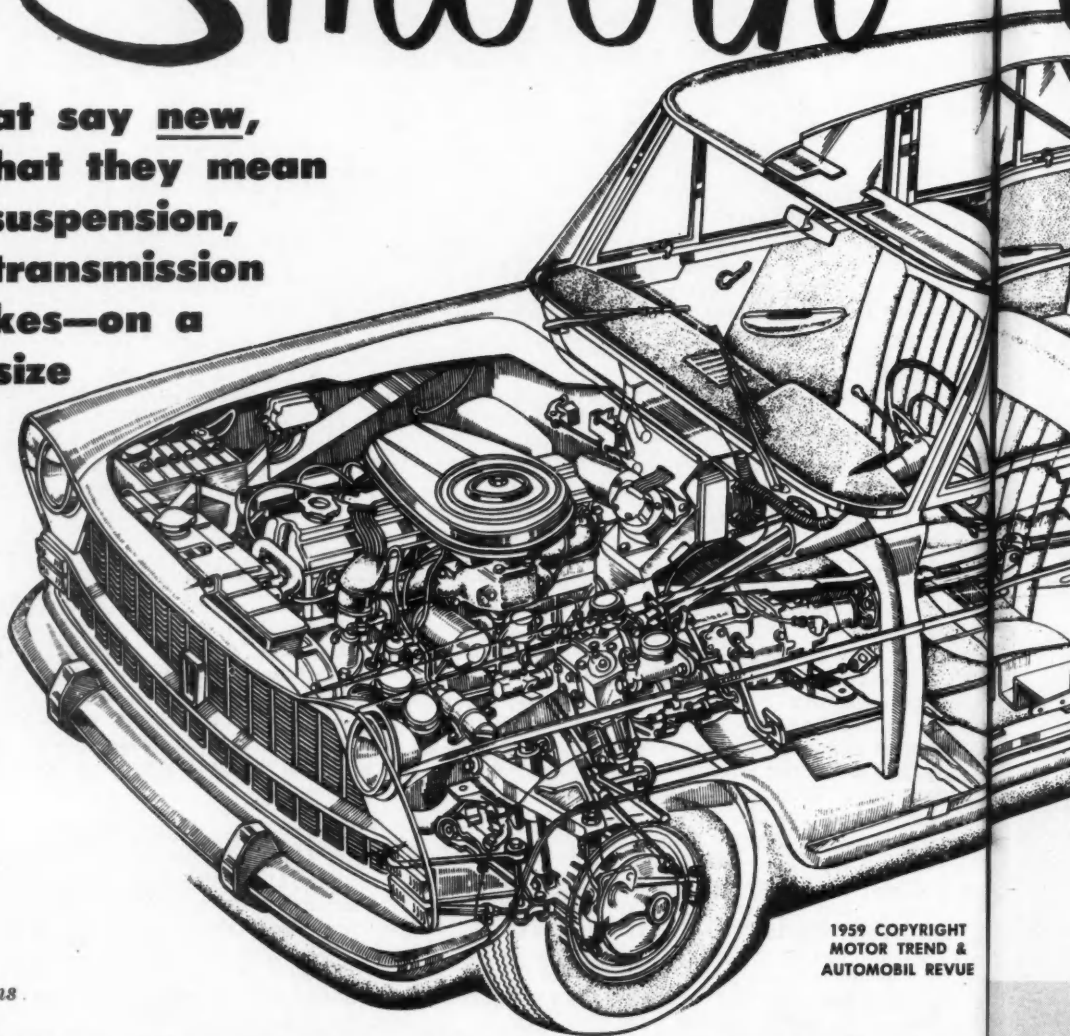
A low-cost luxury car will invade the U.S. market soon. Called the Toyopet Crown Custom, it includes a lot of big-car features and sells for about \$2500...

INTERNATIONAL

Representatives of auto racing organizations of the U.S., Britain and Italy are discussing an Intercontinental Formula of 3.8 liters to run six races a year in Europe and the U.S. to keep big-car racing alive despite the 1.5-liter limit.

Smooth

**When Fiat say new,
that's what they mean
—body, suspension,
engine, transmission
and brakes—on a
medium-size
sedan.**



1959 COPYRIGHT
MOTOR TREND &
AUTOMOBIL REVUE

by Gordon Wilkins.

THE NEW FIAT ENGINES are great. They rev as sweetly as turbines and are quiet at all speeds. I had short runs on both the 1800 and 2100, rushing up the hills outside Turin against a backdrop of the snow-covered Alps glistening in the winter sunshine. Both are lively, but the 2100 has a really surprising ability to storm up steep hills in top gear with a full load.

Because of the deep windows you seem to sit high in the car looking down on the short low hood with an excellent view all around and sight of all four fenders. Headroom is good in front and up to average current standards in the rear. Seating is generously proportioned for four except that rear legroom is not exceptional. The car will take five, but six makes a tight squeeze.

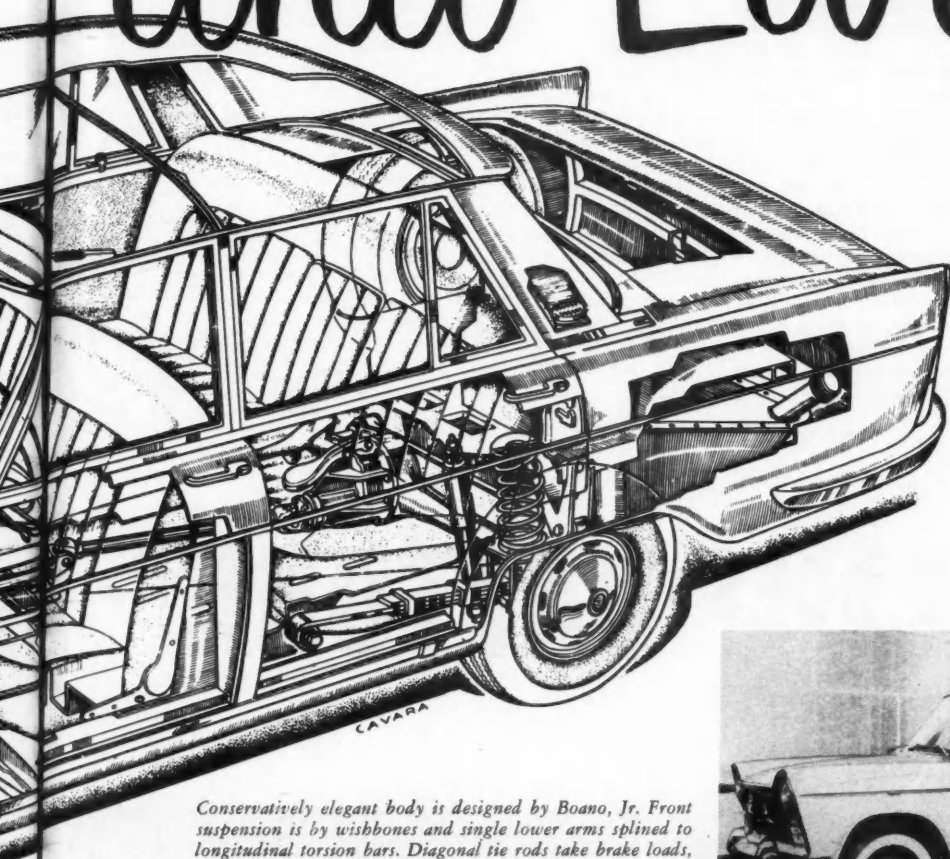
The ride over cobbles, potholes and trolley lines is absolutely smooth and level, with no sign of pitch and very little roll on corners. Road noise is low but there was some whine from the indirect gears. An indicated 60 mph is possible in third gear

without pressing to the limit. Fiat claims the maximum for the 1800 is 87 mph, and 93 mph for the 2100. Their figures for steady-speed fuel consumption are almost identical: about 25 mpg at 40 mph and 19 mpg at 70 mph.

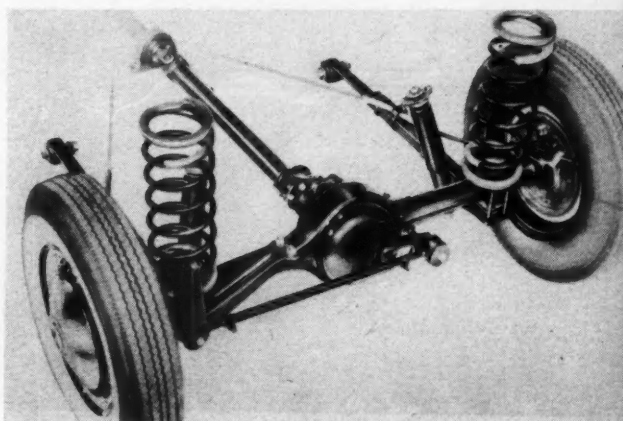
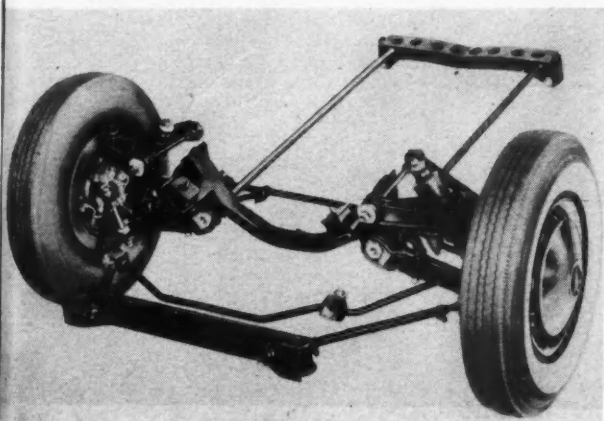
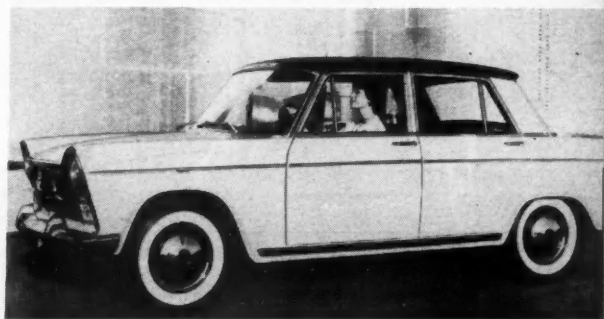
Hard driving with a full load down a steep mountain road produced no sign of brake fade. First impression rates this as a well-balanced, fast, highly roadworthy addition to Europe's medium-sized cars.

The new Fiat is that present-day rarity—a new car all the way through: body structure, engine, transmission, suspension and brakes. It is called the 1800 or 2100 according to the size of the engine, the big engine being the main line for export. It is a fast six-cylinder with an entirely new engine with hemispherical combustion chambers, new four-speed all-synchromesh gearbox, new suspension and brakes with light alloy drums and a clever new anti-skid brake device.

and Lively



Conservatively elegant body is designed by Boano, Jr. Front suspension is by wishbones and single lower arms splined to longitudinal torsion bars. Diagonal tie rods take brake loads, anti-roll bar stabilizes front. Live rear axle sits on quarter-elliptic leaf-spring trailing arms that cushion shocks but locate only vaguely—this is done by a Panhard rod. A meaty link between frame and differential minimizes axle wind-up.



THE HINT OF THINGS TO COME was expressed rather broadly in Daytona Beach, Fla. at the opening of the new 2.5-mile International Speedway in late February. Since Detroit, through their mutual spokesman—the AMA—has opposed sponsorship of factory cars at Daytona, it was a bit out of the ordinary to see the two futuristic General Motors "experimental" cars (see page 24) run out for the 47,000-plus race spectators and Daytona citizenry at large to see for the first time.

While the Oldsmobile F-88 III and the Cadillac Cyclone—the latter suffering most of the time from a fouled-up air suspension system in its tail—stood in saucer-like repose or tooled around the pit area, starting grid, and severely banked asphalt course, auto manufacturing officials in mufti closely studied the methods and results of racing mechanics and drivers.

One factory representative said, unofficially, that they learned more about their product at Daytona than anywhere else, including their own proving grounds. And one can hardly be immune to the vigor in the atmosphere that possibly foretells the style and engineering of the sooner-than-tomorrow passenger automobile.

A veteran's skill is required to produce maximum performance of an automobile under the stresses of competition; nevertheless, the results of these performances materially aid designers in planning improvements. While it is sensible to conclude that no average driver will go to such lengths to prepare, maintain and operate his machine under constant pressure, much is learned by observation at events such as Daytona, where these conditions prevail.

TOP SPEED Considering only 1959 mod-

els, speed records were shattered on the Daytona course. From the beginning of the qualifying trials it looked like Pontiac all the way when Glenn "Fireball" Roberts zoomed around for a startling 150 mph on one lap. Earlier, Roberts had captured the pole position for the 100-mile race by qualifying at 140 mph on the first day of the trials, *in the same car*. As the days of qualifying runs passed, many drivers, in different makes of cars, bettered their previous runs, but none came close to the Pontiac accomplishment.

An Oldsmobile, driven by Lee Petty who eventually was declared race winner following a "photo-finish" dispute, turned in a fastest time of 142.18 for one lap, dropping to a two-lap qualifying time of 141.7 mph. Tom Pistone's 1959 T-Bird ran at an average of 141.37, closely followed by the Chevy driven by Bob Welborn at 140.12.

WHAT DOES DAYTONA

In the 500-mile race, two other makes chalked up qualifying times. These were the '59 DeSoto driven by Bernie Hentges, at 134.83 mph, and a Studebaker Lark driven by Harold Smith for a qualifying average of 116.41. Hentges started the race in 23rd position and finished 37th; the Lark began in 50th position and ended 31st. The only other make of '59 car represented on the starting line was Ford. Distributor difficulties forced this car out after 38 laps of the 200-lap event.

Meanwhile, back on the beach—where the flying mile events were held when weather and tide allowed—again it was Pontiac all the way. Officially, the speed records made here were wiped out because of sponsors' and participants' failure to come to agreement on the question of modification—actually, running "non-stock" tires. However, officially or no, the Pontiac Catalina prepared by Bob Pem-

berton actually did register a two-way run average of 140.35. Following Pemberton, the other disqualified Pontiac owners and their average speeds were: Dr. L. D. Morris, 137.14; Charles Belt, Jr., 135.74; Vicki Wood, 131.86; and Larry Rouse, 129.44 mph.

In a special beach event for "Big Three American Production Stock Cars," Chevrolet, Plymouth and Ford finished in that order. Averages were: Chevrolet, 118.46 mph; Plymouth, 117.88; Ford, 108.60. These cars were family sedans, had a single carburetor, a standard camshaft and automatic transmission.

Other '59 makes participating in the beach trials were Cadillac, 114.50, and Mercury, 120.00. It is perhaps interesting to note, with regard to the '59 Merc figure, that a 1940 Mercury, running on the same day, registered exactly the same speed.

ECONOMY As might be expected, a small-bore machine carted away the honors here. Four '59 models—Studebaker, Chevrolet, Edsel and Ford—competed under eye-dropper conditions against a '28 Ford, a '37 Ford, a '48 Ford, a '50 Chevy, a '50 Plymouth and a '57 Chevy. Overall winner was a '59 Studebaker Lark, feather-footed by Gene Stokes for an average of 68.65 mpg. For his pains, Stokes won a \$5000 cash prize from the sponsoring Pure Oil Co. He was followed by the '48 Ford, 56.66 mpg, and the '50 Chevrolet, 46.75. The first three registered speeds were 17.45 mph, 15.45, and 18.45, in that order.

There was considerable levity in the economy runs, held on a "no holds barred" basis. For example, the '48 Ford used a one-cylinder Velocette motorcycle engine installed in the back seat, and was motivated by a BSA motorcycle transmis-

PROVE ABOUT THE STOCKS?

by Steve DeCosta

sion and clutch. Another, the '37 Ford, used the normal V8 engine and drive mechanisms but had four of the eight cylinders cut off. In the qualifying rounds earlier this car got 102.75 mpg, but in the official run, with an official standing of last of the 11 competing cars, the owner complained, "Leaky fuel pump."

Of the '59 cars entered, here are the comparisons: (1st) Studebaker Lark; (5th) Studebaker Lark, 40.66 mpg; (8th) Edsel, 30.14; (9th) Chevrolet, 27.04; (10th) Ford, 21.89.

BRAKING These tests, consisting of stop-and-go driving similar to a sportscar gymkhana, were discontinued this year on complaints of drivers who participated in previous years and found that nothing was proved except that these tests constituted wilful destruction of machinery.

ACCELERATION Continuing the impressive accomplishment in other tests, Pontiac again justified the MOTOR TREND award as Car of the Year by all but sweeping the slate in the Daytona acceleration trials, held on the beach following the day of the 500-mile Speedway classic. Bob Pemberton's '59 Pontiac Catalina edged out Vicki Wood's almost identical car with a speed in the quarter-mile, from a standing start, of 87.08. Mrs. Wood turned 86.08 mph. Third place was won by a Chrysler 300-E, with a run of 85.71. A '59 Olds racked up a speed of 81.63, for last place among the '59s.

HANDLING, DURABILITY In competition, under the almost-perfect conditions of the new banked asphalt track at Daytona, all of the 1959 cars appeared to handle equally well. Diving into the

31-degree banked turns required little change of direction. We personally took a 1959 Lark and a 1959 Buick around the course for a few laps during a lull in the activities and received almost identical driving impressions. The Buick, displaying more overall torque, took a slight backing off of the accelerator pedal until the high turns were completed, then dug in boldly on the straights. Conversely, it was possible to hold the pedal to the floor both in and out of the turns driving the Lark V8, with no appreciable change of speed on the level stretches.

It is worthy of mention that in, the beginning lap of the events, and continuing until driver strain began to tell, cars of the same make traveled bumper-to-bumper and fender-to-fender, wavering only scant inches as they passed our viewing position. In the remarkably small num-

How the '59s Compared at Daytona

Make of Car	Top Speed	
	Lap Speed	Flying Mile
CADILLAC		114.50
CHEVROLET	140.12	118.46
CHRYSLER 300-E		
DE SOTO	134.83	
EDSEL		
FORD		108.60
MERCURY		120.00
OLDSMOBILE	142.18	
PLYMOUTH		117.88
PONTIAC	150.06	140.35, 137.14, 131.86, 129.44
STUDEBAKER LARK	116.41	
THUNDERBIRD	141.37	

little took around full most quick, took a pedal then itself, to the driving range the continu- cars or-to-ering view-num-

ber of incidents and upsets, the cause could be traced to car failure and/or driver misjudgment.

Conjecture at the beginning of the grueling 500-mile main event had favored two sets of cars, either Pontiac/T-Bird or T-Bird/Chevrolet as certain winners. Reasoning for this was compounded of three main factors: Performances in qualifying trials; ability of crew mechanics in preparing the cars; and last, but certainly not least, driver ability. Therefore, the dark-horse 1959 Oldsmobile which was driven to the heavily argued victory took the win honors with a certain amount of surprise to veteran race observers.

In the final 150 miles, the two winning cars actually stepped up the pace in an incredible display of handling skill and durability of machine. With 30 miles remaining to the checkered flag, the Olds

and the T-Bird stayed as close together as peas in a pod, and were the only two cars to complete the full 200 laps.

From a starting field of 59 cars, both sedans and convertibles, 33 finished the race. Here is a spot finish positioning of the 12 1959 machines: Chevrolet, 5th, 6th, 7th, 15th, 32nd; T-Bird, 2nd, 8th, 9th, 13th; Olds, 1st (the only 1959 model they entered); Pontiac, 23rd (two 1959 entries); Studebaker Lark, 31st.

Tire failure, unexpected because of the shape and design of the Daytona course, proved to be an important factor. Race favorite Fireball Roberts, who retired because of fuel pump failure on his '59 Pontiac, commented on two possible reasons, faulty car assembly (preparation) and driving methods. "If the chassis isn't just right you get a lot of tire wear, and if the driver 'bends' the car too much when

he doesn't have to, then the same thing happens," Roberts said.

Curtis Turner, another favorite in a 1959 T-Bird, finished 13th but stopped for 12 (count 'em) tire changes. Yet the second place T-Bird, as well as the winning Olds, had only one tire change each. A tire company official pointed out that tire difficulties didn't begin until the race was well past the midway 250-mile point. He also expressed the opinion that when the cars experiencing the most tire difficulties were torn down there would be stresses noted on other parts of the car. On an upbeat note, he said new testing methods would be derived from a close study of results from tires used on the totally different Daytona circuit. And it's just possible that Detroit may also learn much from further tests and races at this course—possibly the fastest in the world.

(See story for further explanation)

Fuel Economy (In Mpg)	Acceleration (Speed at end of 1/4-mile)	Handling, Durability (Finish position in 500-mile race)
27.04	83.57	5, 6, 7, 15, 32
	85.71	NO ENTRY
		DNF—blown engine
30.14		NO ENTRY
21.89		DNF—distributor trouble
		NO ENTRY
	81.63	1
		NO ENTRY
	87.08, 86.08	23
68.65, 40.66		31
		2, 8, 9, 13

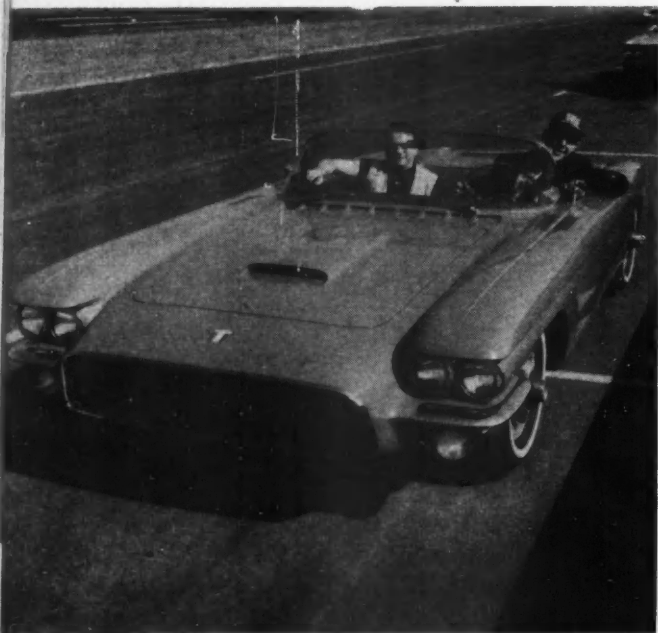
DETROIT'S LATEST DREAMS

Cadillac's Small Car

RATHER MORE "FUTURISTIC" than its sister from Oldsmobile, the Cyclone is the latest development from the drawing boards of Cadillac designers. This machine includes among its Buck Rogers-ish features, doors which slide backward at the touch of a switch into the body paneling, a clear plastic dome top that opens partially to allow bump-free entry, and a radar-locating device in the two front nose cones which scans the highway and warns the driver electronically of objects in his path.

The car measures 197 ins. on a 104-in. wheelbase, with an overall height of 44 ins. Body is fabricated in steel. In the engine compartment there is a standard 1959 Cadillac 325-hp mill featuring a new low-profile carburetor, cross-flow aluminum radiator and two fans. Muffler and exhaust system is located in the front engine compartment with exhaust outlets just forward of the front wheels.

The Cyclone appeared for the first time in public at the opening of the Daytona International Speedway.



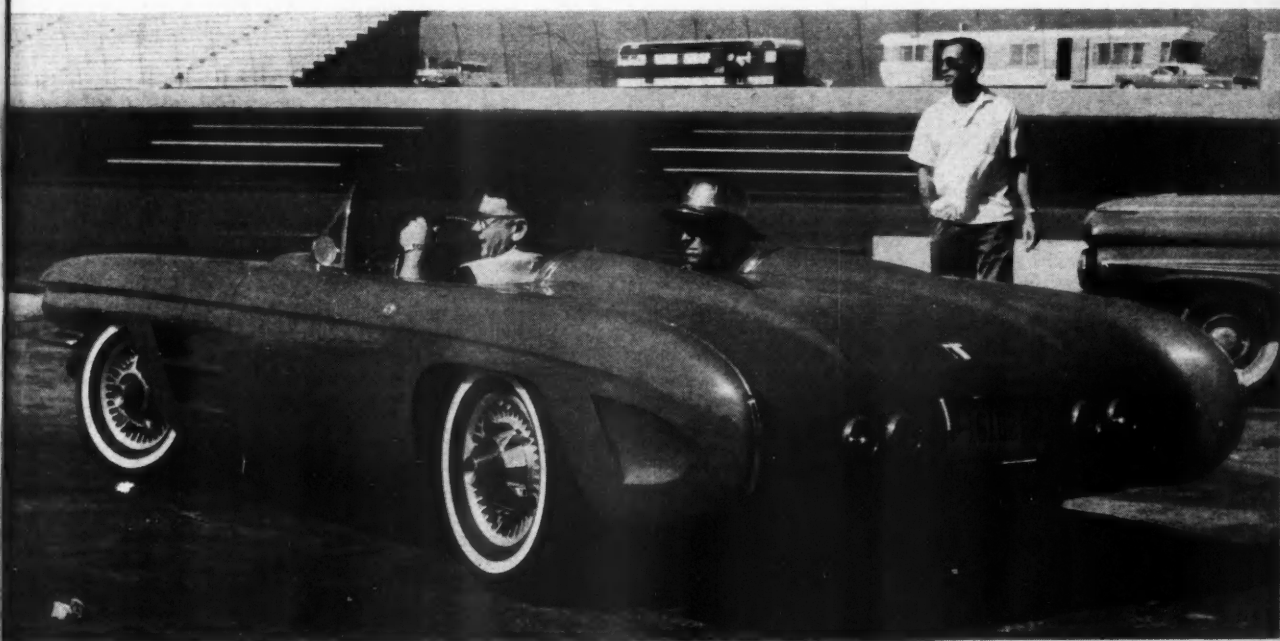
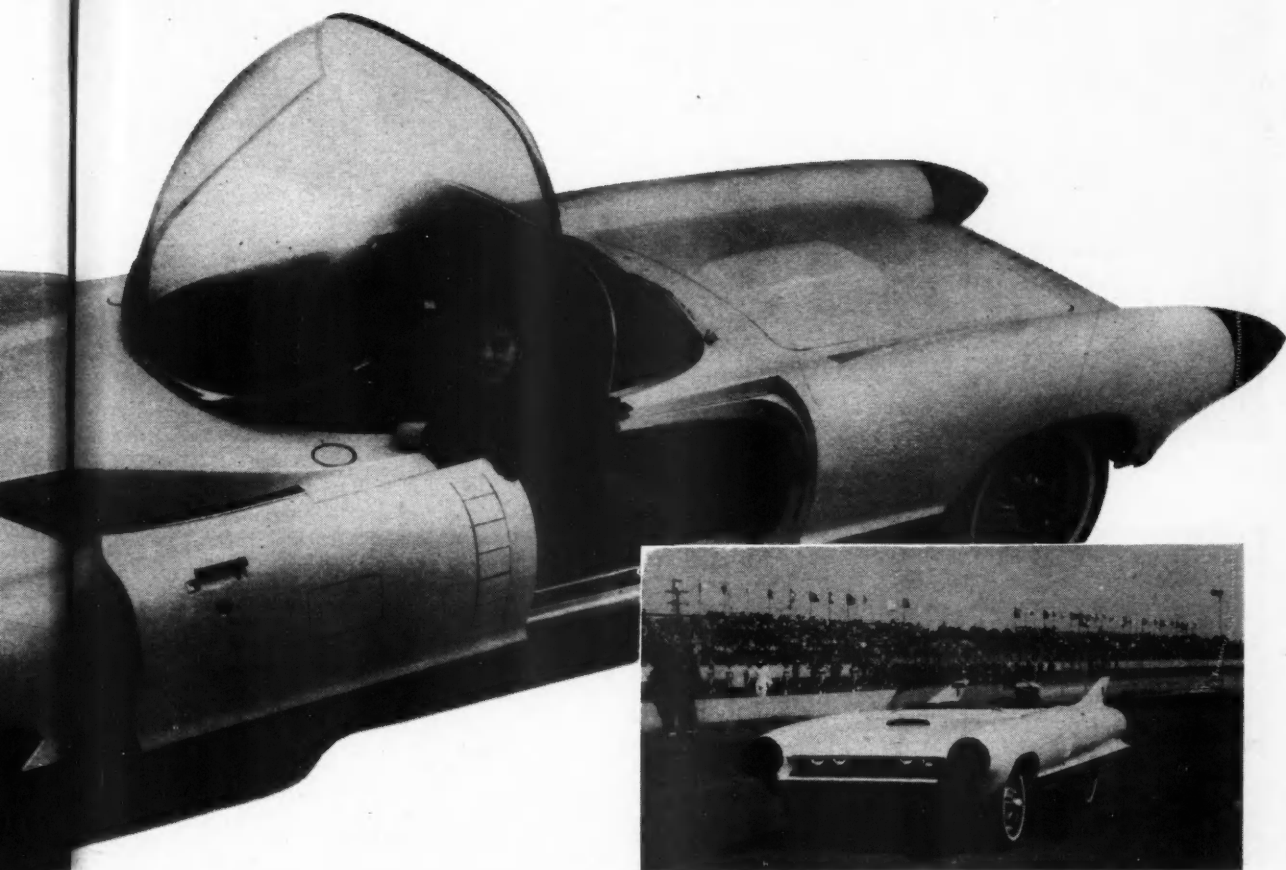
Oldsmobile's Trans-Axle Job

THE OLDSMOBILE F-88 III, developed by General Motors Styling Studio at the Technical Center, also made its first public appearance at Daytona. A radical design, it uses a combination fiberglass and steel body. Wheelbase is 102 ins., overall length 177.6 ins. The experimental hardtop convertible stands only 46.2 ins. high, and weighs 4465 lbs.

The engine is stock Oldsmobile, but is coupled to an experimental Hydra-Matic transmission that is located at the rear axle. This trans-axle arrangement is just one of many installed in GM cars for test and possible introduction in 1960.

Introduction of the car came apparently without warning to factory personnel, press and spectators attending the Florida race events, with the implication that some of the experimental designs featured would find their way to the company's production models sooner than originally believed.

—Steve DeCosta



GETTING
MORE

GO

by Len Griffing

LAST MONTH WE SAID that big power is the result of big fuel consumption, and that the purpose of modification is to enable the engine to breathe more air.

We start by talking about the exhaust system because it is impossible to separate induction from exhaust. A full fresh charge cannot enter the cylinder if some of the burned gases are still there. In order to sustain the introduction of fresh charges in sequence, the expanded gases must be removed efficiently. This means with a minimum of back pressure, and a little help to pull them out.

The force that gets the air into the carburetor, and ultimately into the cylinder, is atmospheric pressure. This is normally 14.7 pounds per square inch, at sea level. The volume of air that enters is a function of the *difference* in pressure between atmospheric and cylinder (theoretically zero). Thus, the theoretical if not actual differential is 14.7 psi. But burnt gases that remain in the cylinder lower this ratio. These gases offer resistance, or create back pressure. The higher the resistance, the less air admitted.

Installation of an efficient exhaust system is one of the cheapest and most rewarding ways to increase engine output, and the power increase is pretty much in proportion to the expense. It can be done either by replacing the whole system, or one piece at a time. Briefly, replacement of the stock muffler with a single straight-through unit will give about one per cent increase for about \$10; installation of a dual system will give about an eight per cent average increase for about \$40; and a header system will produce about a 10 per cent increase for about \$60. You generally get your money back, too, because a gallon of gasoline now covers more miles. Here's why.

Any column of gas possesses the qualities of inertia and elasticity; that is, it is reluctant to get started in motion, but once started it is reluctant to stop. Also, it can be either stretched or contracted.

This complicates the problem for the engineer who has to design an exhaust system. His system must be smooth flowing, with low friction losses along the walls of the pipes, and must also provide for the dynamic properties of the gases. Otherwise, he will actually *impair* complete removal of the expended charge. An improperly designed system may have partial stoppages, such as severe bends or constrictions, that slow the gas and start it flowing *backward*. This will be due to oscillation induced in the column when the gases stop, compress and rebound.

He can figure the total flow volume easily, but flow cannot

be established as so many feet per minute. Eight-cylinder 200-hp engine exhaust flow is relatively smooth, as compared with the exhaust from a four-cylinder engine of similar rating. With the eight, the exhaust impulses are more frequent and each cylinder volume smaller, allowing time for each slug of exhaust to work along the pipe and outward. In a four-cylinder engine, the pulsations are half as frequent, but the puffs are twice as big. Thus, the exhaust pipe suitable for the eight-cylinder engine would be much too small for the four-cylinder engine of the same capacity. And, in a modern big-bore high-speed V8, the slugs are pretty frequent and pretty big.

This is why there is room for so much improvement in the exhaust system of your engine. The capacity of the muffler and piping should be something like 20 times that of the "slug volume," which is the size of the puff of exhaust gas emitted from each cylinder. Most stock systems are unable to handle big slugs coming fast.

In addition to passing exhaust efficiently, a well-designed system also helps to get a fresh charge in. The physical motion of pumping is fuel consuming, and we know that about a third of the heat energy contained in the gasoline goes out the tailpipe in the form of heat. It would seem logical then to use as much of this energy as possible.

The problem of setting up a semi-tuned exhaust is complicated because the flow of exhaust gas is a series of pulsations. These cause the pressure in the system to vary, with peak pressures and peak velocities in the branches, rather than in the main pipe, unless the branch pipe and main pipe are nearly the same size. The main pipe has a larger volume to expand a slug with a lower average pressure rise. This pressure rise, incidentally, is the cause of exhaust noise.

The straight-through exhaust system works on the principle of noise absorption. The column of gas has a frequency at which it vibrates, and the muffler is set up to absorb the major frequency lengths. If all frequency lengths were covered and completely dampened, the exhaust would be dead quiet; but the back pressure would be severe. The idea is to set up a ram system that doesn't dampen completely, and uses the pulsation of one exhaust slug to help pull the next slug out. The correct length of correct-diameter exhaust pipe makes the peak of the first reflection coincide with top dead center of the next, catching the oscillating column on its way out as the exhaust valve of the next cylinder opens. This creates a last-minute suction that not only pulls through the exhaust valve, but because of valve overlap

-hp
the
the
der
ork
oul-
pig.
ine
the
the

the
and
lug
ted
big

ned
ion
ird
the
use

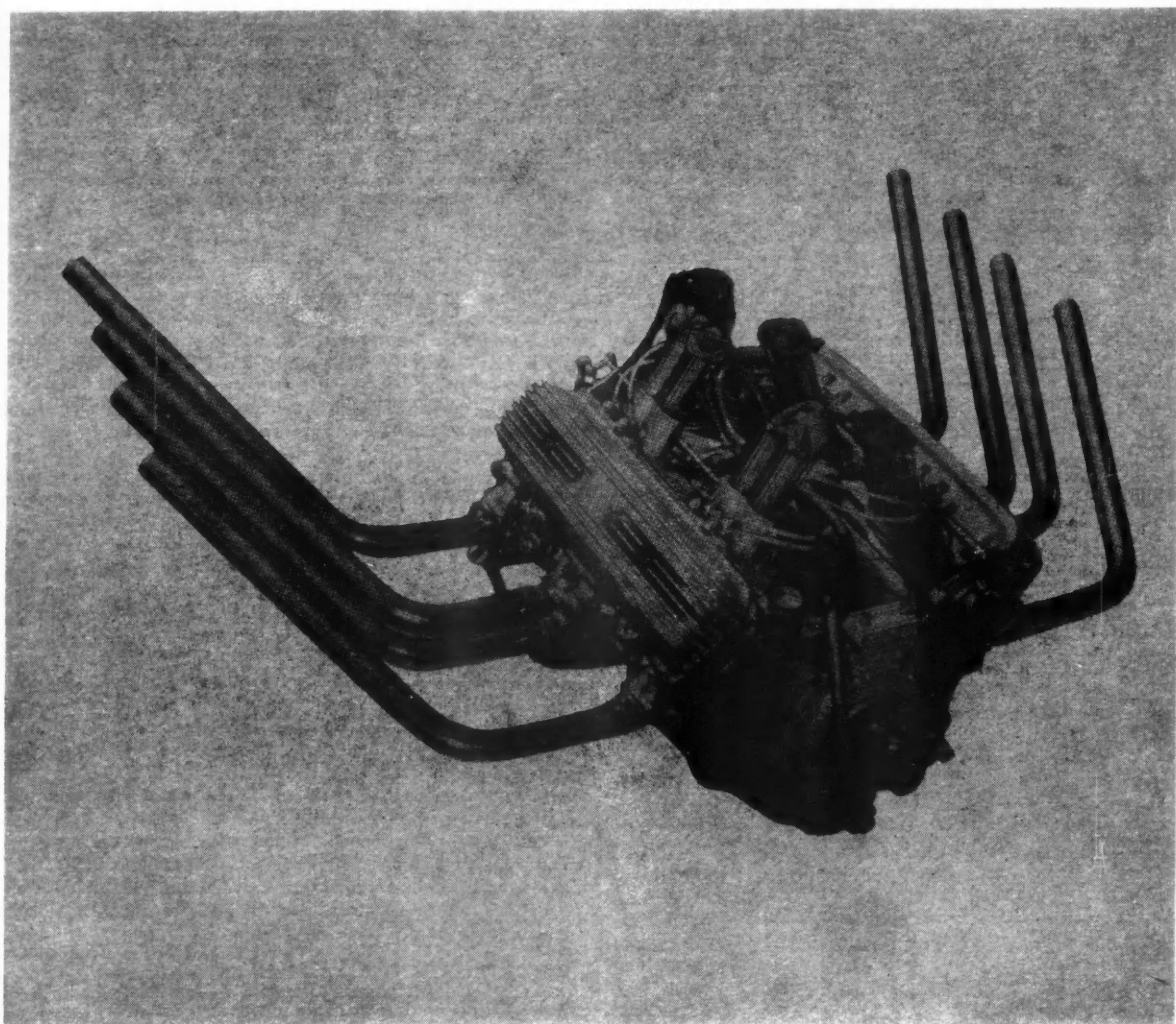
pli-
ns.
es-
the
rly
l a
se,

of
ich
re-
m-
ck
em
ne
gth
rst
he
ext
ly
ap

Sc
he

Headers

Screamers, Steamers or just plain sleepers—well-designed headers make GO cars out of Slow Cars

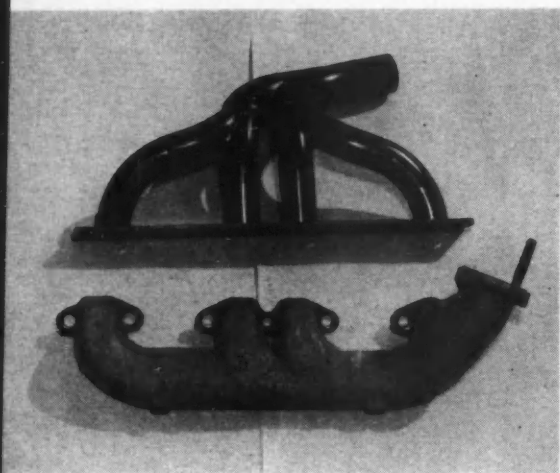


GETTING MORE

GO



Stock exhaust manifold is angled and constricted, causes back pressure. Bob Hedman's custom piping is oversized; bends are angled gently, help "pull" exhaust out.



PHOTOS BY BOB D'OLIVO

Production and cost engineers generally force designers to install a poor system. Custom headers use big pipe, stretch out the bends, which helps to reduce back pressures.



Cast iron headers will never burn out; however, they are generally a little more expensive, require precise fit. Header ports must align with engine ports for best results.

(both intake and exhaust valves are open simultaneously for a short time) helps to pull a fresh charge in through the *intake* valve.

With normal valve overlap the increase in volumetric efficiency (the volume of air the engine *does* breathe in two revolutions divided by the volume of air it *should* breathe) is in the order of five per cent. If valve overlap is severe, the power increase that accrues is paid for in high fuel consumption. The engine gets real wasteful.

However, if you're willing to sacrifice fuel economy, increasing the overlap literally displaces the burnt gases from the cylinder by shoving the fresh charge through. If you could close the exhaust valve just as the fresh charge gets to it over the entire speed range the system would be perfect; if the exhaust valve stays open a little too long, some of the fresh charge goes out with the exhaust. This practice has a very beneficial cooling effect on the piston crown and the exhaust valve, and increases the longevity of the engine; however, it's so wasteful that it is normally reserved for racing engines.

Any examination of the automotive exhaust system has to be justified in terms of horsepower per dollar. In this respect, the natural divisions are replacement of the single reverse-flow or baffle-type stock muffler with a straight-through type; installation of a dual exhaust system; and the installation of a header system. Naturally, the ideal is a combination of all three; however, tremendous gain can be realized by the addition of any one, singly. Let's start by talking about headers.

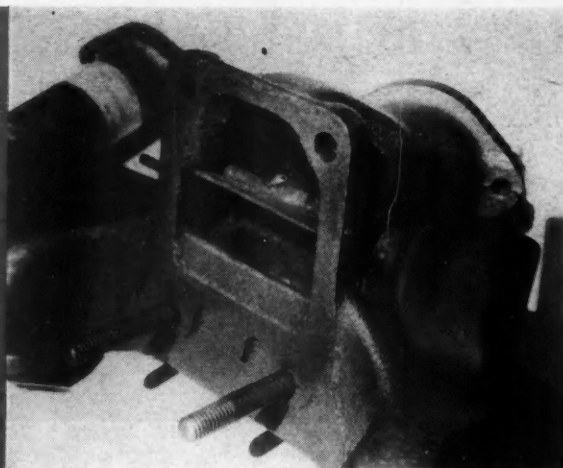
HEADERS A header system for the modern car is one of the most rewarding modifications that can be made. It not only relieves back pressure, but serves to create a positive effect on induction. As Bob Hedman, one of the giants in the header industry, says:

"I'm not satisfied to get rid of the exhaust. What I do is set up a system where the exhaust from one cylinder helps take the exhaust from the next out with it. We go by the accepted exhaust-pipe formula, and then experiment on the individual systems until we get the one that works best. If we can't get a fair power return for the customer's dollars, then we don't make up the system."

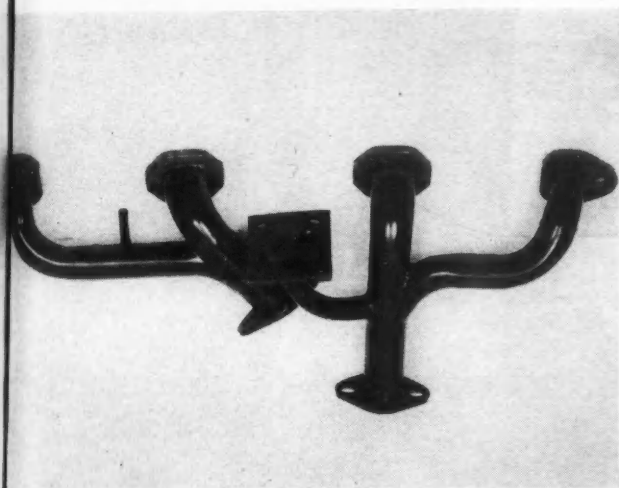
Me
app
div

Le
fold
flow
whic
The
own
If
woul
joins
start
Fi
than
gentl
V8,
Both
bank
toget

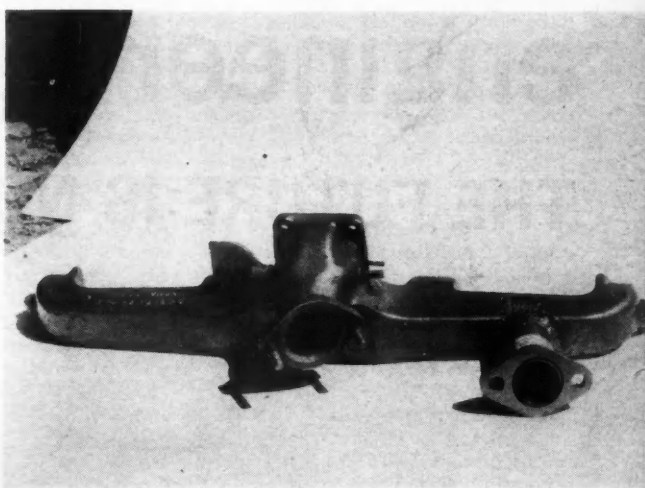
**dual pipes—simple bolt-ons
that give from 5% to
15% more power
to the rear wheels**



When straight-six manifold is converted to take dual pipes, a divider is welded inside to form 2 3-cylinder systems. A dime-size hole is cut in the divider to equalize slug pulsations.



Mercer has a porcelain-covered quality but space-age-looking approach to the straight-six header. Exhaust ports are well divided, but only careful installation prevents misalignment.



Douglas takes your old manifold exchange, gives you reconditioned and reworked unit with divider and second flange in place. Exhaust slugs enter on alternate sides of divider.

Let's take a look at what Bob means. A stock exhaust manifold has bends and narrow constrictions that cause changes in flow pressure. These constrictions also cause stray reflections, which in turn cause oscillation of the gas within the manifold. The only way to avoid these is to give each exhaust port its own exhaust pipe.

If each pipe were to extend all the way back unjoined, this would get the gases out but would not be true "tuning." Bob joins the pipes on each side at a predetermined point. But let's start right at the engine.

Fitted to each exhaust port is a circular pipe always larger than the port of the engine. Each pipe is oversize, and angles gently over a long distance until it joins with another. On a V8, there are two of these two-pipe junctions on each side. Both join together farther down, to form a system for each bank of four cylinders. On a six, each three cylinders join together.

In theory, an angle of 45 degrees or less at the junction causes the least back wave, or oscillation. Thirty degrees seems to be the ideal on paper. With the acute angle of entry, exhaust passing through one of the pipes seems to induce a small extraction effect on the other pipe.

If the angle is nearly 30 degrees, the one effect of pushing the gas back and the other effect of pulling it out seem to cancel each other evenly. But what should work doesn't always; experimentation is the only way to find the exact point to join the pipes, and the correct diameter pipe to use.

Another advantage the header system has over the single-opening exhaust manifold is that reverse pulsations from farther back in the system are divided. If a wave starts back from the muffler or the tailpipe, the pushing-back effect is dissipated evenly over each of the openings and reduced proportionately. With a single-opening manifold the rebound is received full amplitude; one two-pipe branch cuts it in half; two two-branch

continued on page 80



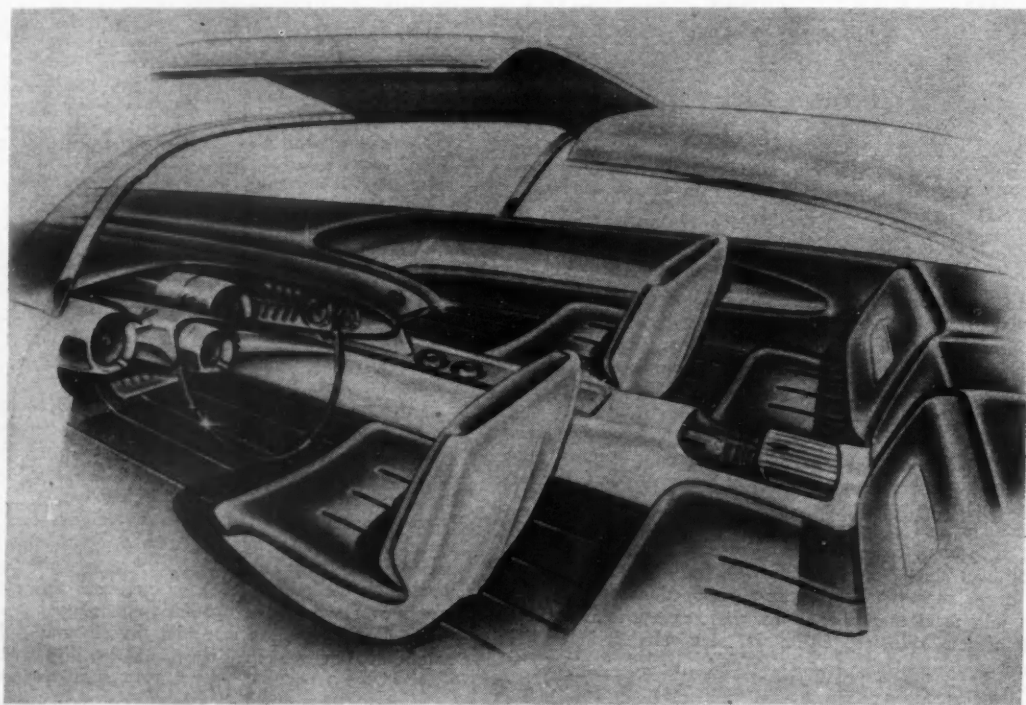
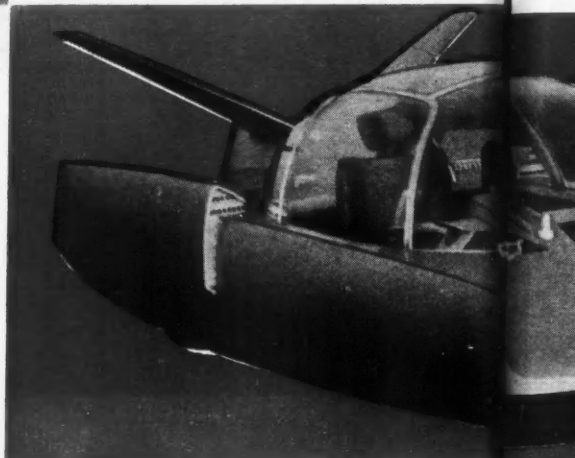
DESIGN . . . AN IDEA OR THEORY that begins in the mind and ends up on the drawing board might be the answer to a prescribed problem, something new or better, an improvement on an old idea, a unique way of doing a job, or—as in the case of some of the “cars of the future”—a whole new approach to private transportation.

There is a fine line between theory and design. Some real great theories have fallen

design engineering

THE FUTURE IS NOW!

by Charles Nerpel, Technical Editor



by th
desig
line
factu
const
It m
exces
loss
ultim
least.
Be

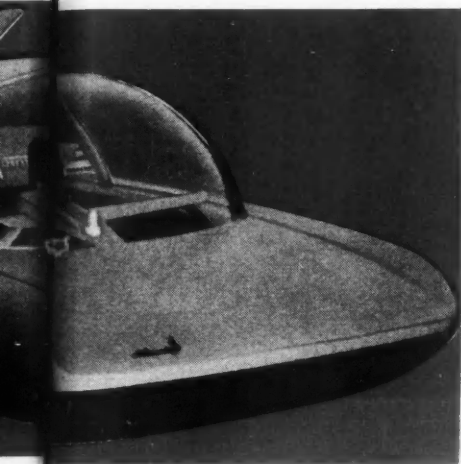
design
cars”
well f
where
have
trol
auxili
hydra
gine t
the ra
today
lot of
passen

Do
derful
derful
magaz
that h
for ou
lions c
highw
by 19
the F
more
—if c
years.

The
require

by the wayside because they could not be designed into practical application. This line is held even finer by modern manufacturing methods and the taste of the consumer, for the design must be practical. It must do the job without complication, excessive maintenance, high cost, or great loss of efficiency. In plain words . . . the ultimate in design is the most for the least.

Before launching into today's trend in



design, we should appraise the "dream cars" or cars of the future. We would do well first to see where we are going, not where we have been, for these dream cars have really "been." With electronic control by cables buried in the highway, auxiliary engines to run the electronic and hydraulic equipment, and a turbine engine that currently has difficulty bettering the rather extravagant fuel demands of today's big piston engines, they require a lot of complicated functions to carry few passengers.

Do not misunderstand—these are wonderful experiments, and even more wonderful space-getters in newspapers and magazines. However, despite the billions that have been collected in gasoline taxes for our highways, and the additional billions currently being collected for a Federal highway system, it is not likely that even by 1972 (target date for completion of the Federal project), highways will be more than adequate for today's motoring—if cars do not change in the next 13 years.

The automobile of the future will not require the springing, suspension or steer-

ing necessary for today's road conditions. If those future highways follow the trend of the experimental car design—and they must—the surface will be as smooth as glass, be of special material for maximum traction in wet weather, probably resist formation of ice and snow deposits, have few curves (those that are necessary will be banked and calibrated for various speeds), have no stop or signal-controlled intersections, and will be lighted with non-glare, fog-penetrating lights.

Very few of us reading about these "dreams" are ever likely to experience appreciable stretches of such highway except on a proving ground or experimental strip. Today's design is aimed at improving our concept of motoring, and providing vehicles that will do a better job of negotiating our present highways. Suspension and load leveling make today's roads as smooth as glass; steering and weight distribution make it easier to zoom through curves smoothly and safely; better brakes and tires reduce the danger of foul weather road conditions; and improved headlights and driver visibility lessen the hazards of night driving.

We at MOTOR TREND have driven all of the 1959 cars and road tested most of them. In addition, many imports have been run through our test program on the streets and highways and at Riverside Raceway's proving grounds. There are exceptions, but as a whole, most late-model cars have already developed to what we considered "future" only a few model years ago. How various designers have done this, and speculation as to why they chose such solutions to their problems, provide some very interesting design analysis.

Through the years the automobile has developed from a cranky, temperamental, uncomfortable, expensive, single-purpose vehicle, to a comfortable, reliable, relatively cheap, multi-purpose vehicle. By multi-purpose we mean the ability to do more than carry passengers between two points. Today's cars must handle as well with one person as with a full load of five or six, carry a luggage compartment loaded with everything from camping equipment to an antique anvil, tow a house trailer, carry a boat on the roof, do 100 mph, accelerate like a dragster, steer with one finger, have no clutch pedal, be air-conditioned and hi-fi-radio-equipped, shift automatically, and get 15 miles per gallon. If you think *you* have problems, think of the designers and engineers who are under pressure to solve these problems, and the manufacturer who must provide the type of car the motoring public demands for a price within the current economic scale.

The buyer has a wide choice among

present domestic or imported cars, depending on the multiplicity of purpose he demands, from a three-wheeled Messerschmitt (real basic transportation) to the 2½-ton luxury sedans or station wagons. Each designer throughout the world has made an attempt to provide the ultimate in some phase of automotive transportation. Let us explore what they are after and what they have done to achieve it by selecting three representative late models—Buick Le Sabre, Volvo, and Citroën DS-19.

This is not a road test or endorsement of these particular cars, but a selection for what they represent:

Buick—modern American family car with a big V8 engine, automatic transmission, power brakes and steering, and a rather conventional American approach to suspension.

Volvo—simple, unadorned 1½-liter, four-cylinder family sedan with stick shift, hydraulic brakes, mechanical steering and conventional European approach toward suspension.

Citroën DS-19—highly-touted French family sedan with hydraulic everything, powered by a four-cylinder engine of two-liters piston displacement, with front-wheel drive and independent suspension on all four wheels, sprung on automatically leveling gas-oil shock units.

The more complicated the mechanism, the more it costs and the higher the maintenance expense. The power assists that do the work for us continue to cost in the extra fuel required to do the job.

The words *economy, reliability, and upkeep* are heard more and more in connection with automobiles. Simplicity is the keynote for a design for this type of service, but like the over-optimistic race car builder who thinks he can build a one-cylinder 30-cubic-inch car that will outrun a big 400-plus-cubic-inch V8, designers still try to get a little more for a lot less.

As front seats got wider and the shifting lever became more of an annoyance to the center passenger, the column lever was designed. The stroke was long and the linkage worked loose, but it gave more floor space. But soon the clutching was an annoyance as was the need to shift, and before long we had an automatic transmission. This was great—more people became interested in driving, more could drive, more were willing to pay the extra cost, and forget the loss of engine power to the rear wheels, the need for more and better maintenance, and the big hump in the floor center that gave even less leg-room than straddling the old-time floor shift lever.

The demand for more power motivated bigger engines to accommodate drive-



Volvo: Functional Swedish simplicity. Citroën DS-19: French version of hydraulic control. Buick Le Sabre: American luxury sedan.

design engineering continued

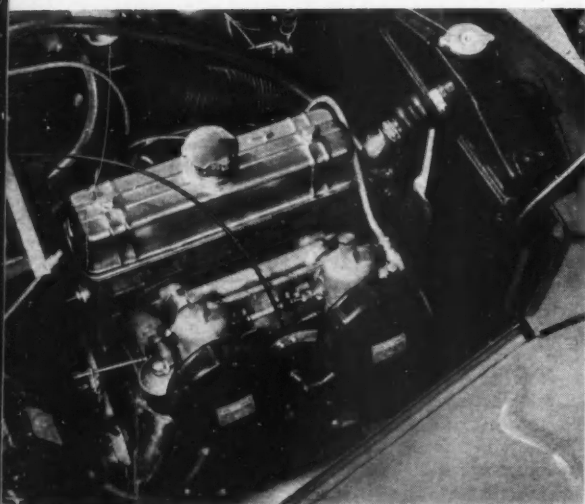
power losses. Each time another marvelous power assist was added, the engine got bigger, was shoved farther forward to give more passenger room, but added more weight to the front wheels and made power-assisted steering more of a necessity than "a nice thing to have." Amid the screams of overloaded front wheels and large engine power loss necessary to drive hydraulic pumps and automatic transmissions, there is still the logic of natural progression behind these designs.

On the other hand, we have a logic that is hard for us to understand in some of the design features of the Citroën DS-19. On paper this is a fantastic car, but on analyzing the all-hydraulic design features, the gain for the complexity involved is questionable. First we have a 122-cubic-inch four-cylinder engine rated at 75 hp. To this we add a seven-cylinder hydraulic pump that furnishes power for steering, braking and shifting. The gearbox is four-speed manual with manual-controlled hydraulic shifting and automatic hydraulic clutch control. It is front-wheel drive and has inert gas over oil for suspension and automatic load leveling.

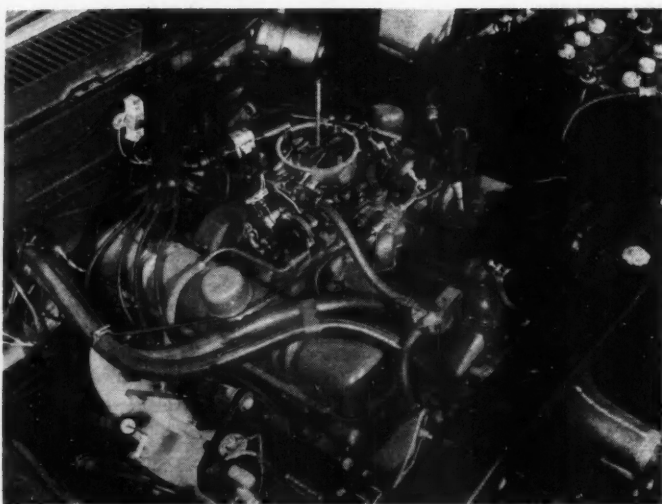
First—the Citroën's front-wheel drive. We have now solved the hump and driveshaft tunnel problem, but for what purpose? Individual front seats make it almost impossible to carry a center front passenger, but if we could, little would be gained as almost one-third of the engine extends into the driver's compartment. The rear floor, however, is flat. Two-thirds of the weight of the car is on the front wheels, and despite the argument that this is advantageous for front-wheel drive, the lower power output of the small engine makes this car handle like most cars with overlaid front-wheel weight distribution.

One of the advantages of hydraulic control is that the controls can be located anywhere you can run a hydraulic line. Shifting on the DS-19 is by lever located in a calibrated slot in the dash forward of the steering wheel, with the lever pointing straight up. Here again is a question. Has the designer made the most of the flexibility of hydraulic control, for with the manual shifting required, aren't we back to many of the same faults of the old manual column shift?

Buick, on the other hand, has an engine-driven hydraulic



Overhead-valve four-cylinder engine has room to spare under Volvo hood. Large dual SU side-draft carburetors give good performance, fuel economy.



Huge V8 in Buick Le Sabre is typical of most American designs. Pumps and hoses necessary for power assists increase normal engine overhaul costs and air cleaners on down-draft carburetors limit low hood lines.

pump
horse
vide
Howe
Vo
out o
with
any l
engin
twice
Th
do no
overa
will n
had l
reduc
beatir
Th
the D
other
to ge
reason
shoul
and c
Citro
their
type i
W
to hit
of big
ing o
up se
promp
board
It v
able r
vehic
handl
passer
on the
power
althou
their l
As
conce
portab
vastly
were n
thing
handl
alumin
engine
to 400
carbun
modifi
in pow
rapidly
research
in the
or stea
autom
Des
and an
boys w
low ho
to enc
a filter
heavy
on hoc
the Ci
small

pump and an automatic transmission, plus a big V8 with enough horsepower to give plenty of rear-wheel power and still provide as complete an automatic operation as is currently practical. However, gas mileage is only about one-third that of the DS-19.

Volvo's design may be called simple with its floorshift right out of a four-speed all-synchro gearbox, a husky 1600cc engine with a wild cam and twin SU carbs, and no power assists of any kind. This makes the driver do all of the work but the engine gets a lot of its 85 hp to the wheels with more than twice the gas mileage of the Buick.

The Volvo is rugged and reliable. Americans, on the average, do not drive their cars long enough to appreciate the maximum overall engine life, but when you tell a Swede that his Volvo will run close to 100,000 miles without an engine overhaul you had better be able to back it up. Failure to do so not only reduces sales greatly, but there will be a lot of angry Swedes beating on your factory door.

The inert gas-oil method of suspension and load leveling of the DS-19 probably requires less engine power than any of the other features and provides about the best ride it is possible to get in a vehicle. American designers faced with maintaining reasonable straight axle lines with the swing axles necessary should domestic manufacturers decide to combine transmission and differential, would do well to take a good look at the Citroën system. With the tendency of Americans to overload their big cars with heavy luggage and trailers a design of this type is a must with independent rear suspension.

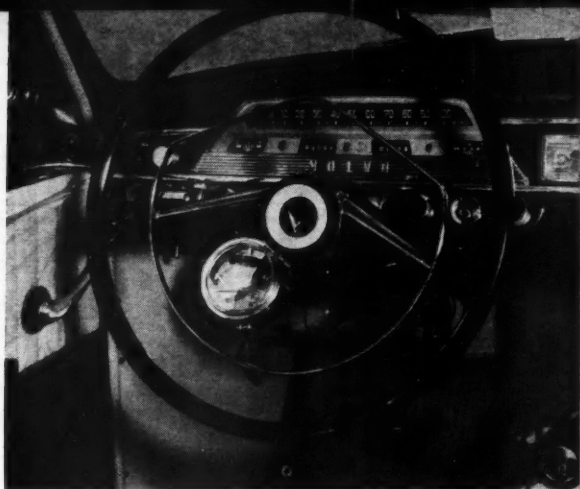
While American manufacturers have increased costs and tried to hit a happy fuel consumption medium to satisfy the demands of big-car buyers, an increasing number of customers are purchasing one of the current two smaller domestic cars and gobbling up several hundred thousand imports yearly. Such a trend prompted Detroit to get their smaller cars off the drawing boards and into production to compete with the imports.

It will be interesting to see how well Detroit designers will be able to control the tendency of Americans to overload their vehicles. Europeans reduced many of their springing and handling problems by making luggage compartments and extra passenger space so limited that it is difficult to put much more on the suspensions than they were designed for. Lower horsepower engines in these cars also discouraged housetrailer towing although we have seen some optimists with trailers that dwarfed their European tow cars.

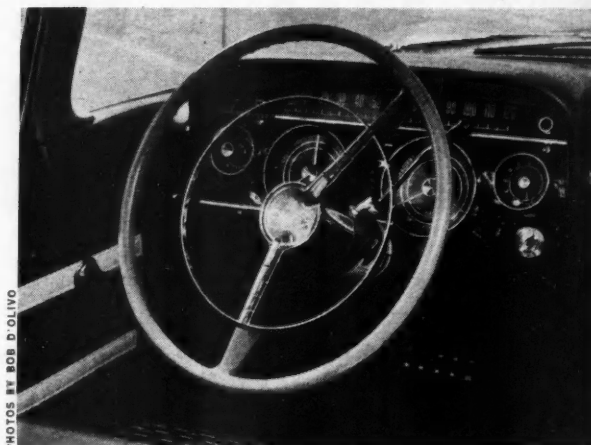
As far as the present piston engine (American version) is concerned, it will be with us for some time as it is still the best portable powerplant available. In fact, its efficiency could be vastly improved right now without any modification, if vehicles were made lighter and the pounds per horsepower reduced. One thing an automobile needs the least for ride, comfort and handling, is weight. Designers are right now duplicating in aluminum most of the components of a car, including the engine, to increase overall efficiency. With displacements out to 400-plus inches, compression ratios in the high 12s, multi-carburetion, optional superchargers and cams, a great deal more modification has to be done each time to gain increasingly less in power. Turbine engines for automotive use are developing rapidly but by the time they reach public acceptance our nuclear researchers might have a relatively cheap small source of power in the form of heat that would make a steam-turbine drive or steam-generated electric drive the most practical method of automotive power ever developed.

Designers and engineers also have a great influence on styling and are often forced to make concessions to accommodate the boys who wrap up the package—the stylists. The artists conceive low hood lines, small frontal areas, and rakishly low silhouettes, to enclose a big V8 engine with down-draft carburetors and a filter for them that has been reduced to the thickness of a heavy pancake to clear hoods. European stylists can go the limit on hood lines and low frontal area—an excellent example is the Citroën DS-19—because of the almost universal choice of small four-cylinder side-draft-carburetor engines. There are

continued on page 71

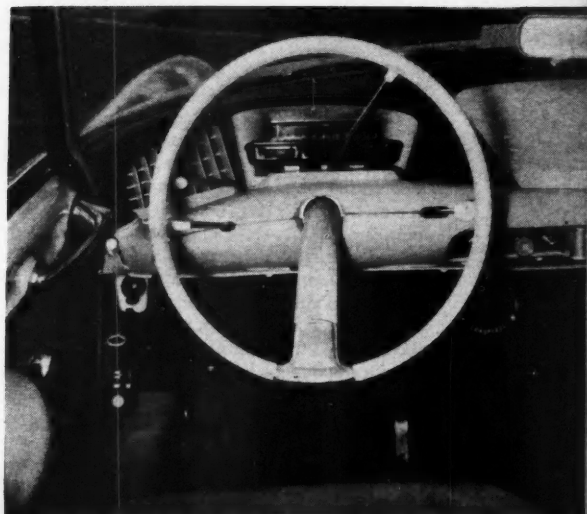


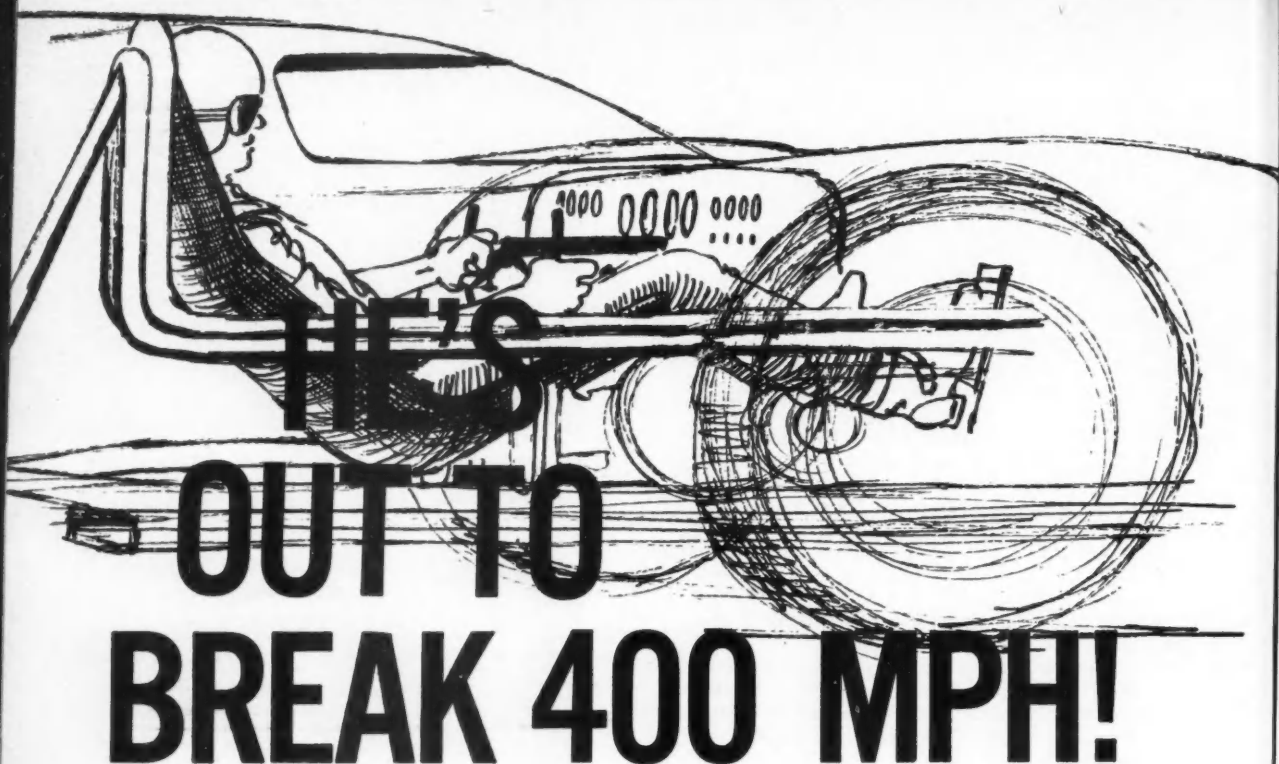
Electric tachometer has been added to Volvo's simple instrumentation. Gear selector is stick shift direct from the transmission and there are no power assists.



Buick instrumentation is ornate but easy to read. Drive selector lever and foot throttle are the only manual controls as all other driving functions are power assisted.

Citroën DS-19, with single spoke wheel turned to show parking brake, has automatic clutch, power steering and brakes, and manual control of the hydraulic shifting.





Story and Photos by Geoffrey Hardin

FOR 15 YEARS, 30-year-old Southern California hot rodder Mickey Thompson has burned with the inner desire to be the fastest driver on the face of the earth. Half his life has been dedicated to the satisfaction of this desire. During the majority of those years this consuming flame has been dwarfed by the towering record of 394.2 miles per hour established in 1947 by the late John Cobb of Great Britain.

Thompson fed the flame in his heart with education and experience, for these were the fuels necessary for its growth. Year after year he learned more and more about chassis design and engine modification. He strove to be first in every class of automotive competition he entered. He observed all attempts by all hot rodgers at building streamlined cars for the salt flats. He learned much from their mistakes. By 1957 he felt that he was ready for the silent challenge.

Realizing that many of his own theories were untested, Mickey very wisely decided to first build a small machine. In this he wanted to incorporate all or most of the design factors dictated by his ultimate goal.

By spring of 1958 two healthy Chrysler engines had been mounted in a chassis slightly larger than the average dragster. The forward engine was reversed to drive the front wheels, and the rear engine was coupled through a transmission to the rear axle. When he appeared at the 1958 Bonneville National Speed Trials in August with this experimental machine, many of the enthusiasts who observed the unfinished appearance of primer paint and unorthodox body design smilingly prophesied that no great achievements could be expected from such a vehicle. But Thompson, knowing the sole purpose of the machine, disregarded the remarks about its appearance and proceeded with the tests.

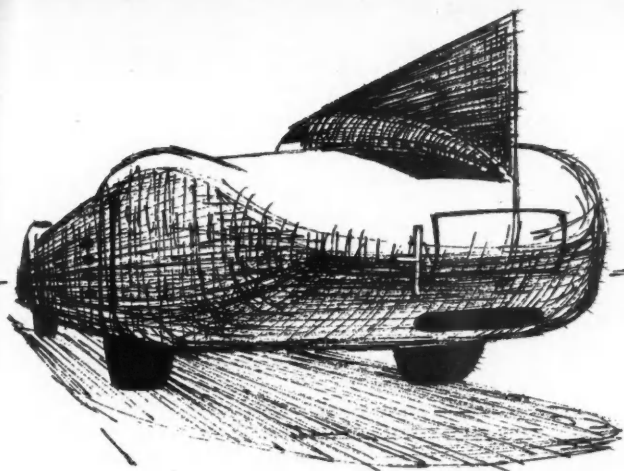
Every one of his design concepts proved to be even

better than originally hoped for. By the end of the week-long speedfest on the salt flats Thompson had shattered the top American record with a speed of 294 mph (see "My Greatest Thrill," Feb. '59 MT). Even more important to his ultimate goal, he proved he could accelerate from a standing start to over 270 mph in less than two miles. This was a factor of considerable importance due to the limited length of the straightaway over which the car would be timed. The machine, at close to 300 mph, had used only 800 horsepower and had handled beautifully. The basic design theories were thus proved correct and Thompson returned to his home in El Monte, Calif. to begin work on his land speed record contender.

The success of his new machine would depend upon satisfaction of many requisites: 1) The entire machine would have to closely match the test machine in size. 2) It would require almost 2000 horsepower. 3) Tires would have to be as small as possible, yet tough enough to endure tremendous distortional loads during acceleration and unheard-of centrifugal forces generated by wheel speeds in excess of 4600 revolutions per minute. 4) The entire machine would have to be as light as possible, somewhere between 4-5000 lbs.

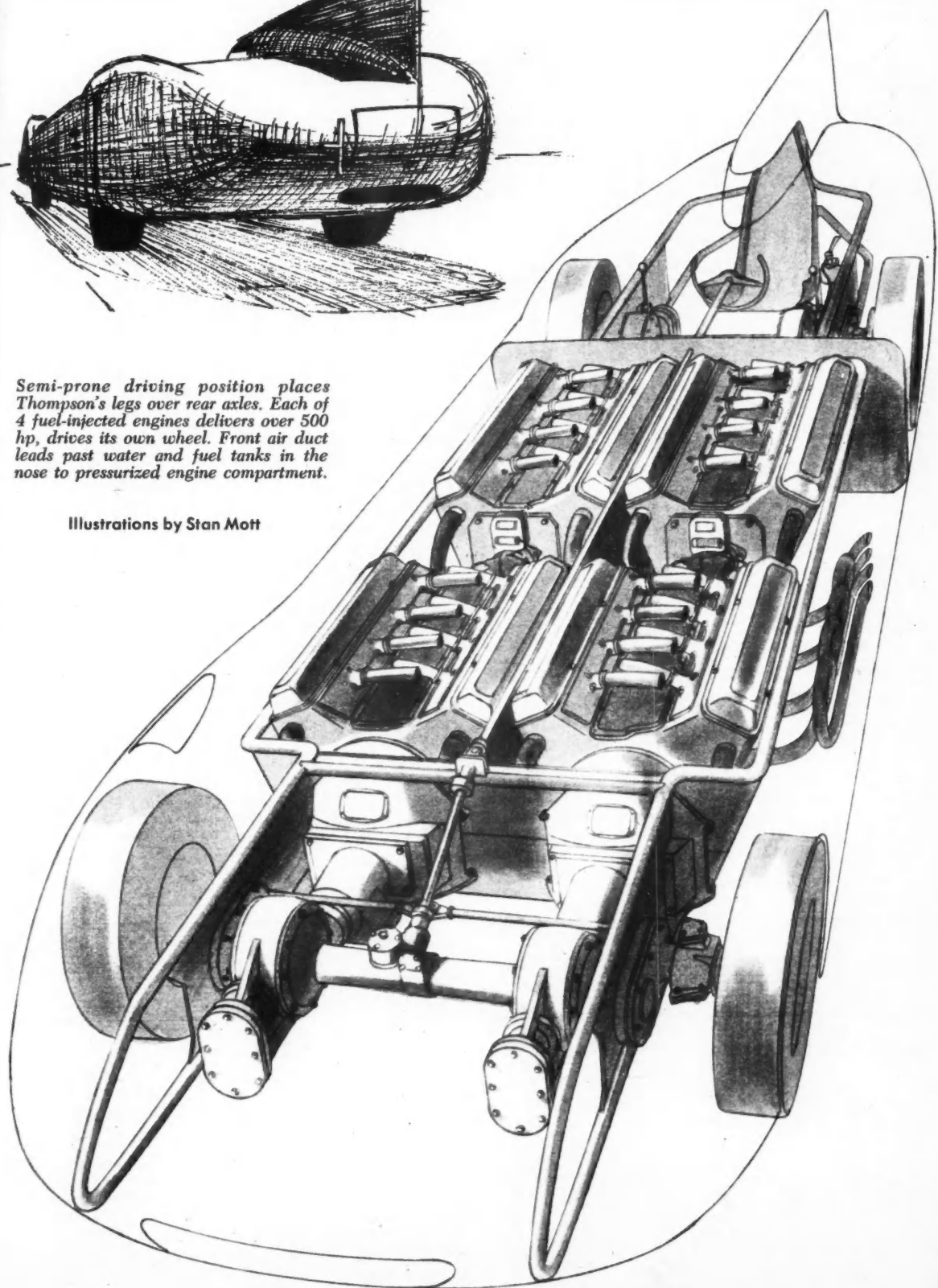
These demands and the problems they presented were all very closely interrelated and no solution for one could be found without studying its effect on the others. Mickey called his design associates together for a general meeting with the hope that by working together they could find solutions for all the problems. The group he gathered around him—and their responsibilities—were: Cliff Collins, engine modifications; "Mac" McMannus of Goodyear Tire & Rubber Co., tires; George Hill, body design; Ted Halibrand, wheels and other magnesium castings; Cook Leddington, special machine work. Mickey

continued on page 36



Semi-prone driving position places Thompson's legs over rear axles. Each of 4 fuel-injected engines delivers over 500 hp, drives its own wheel. Front air duct leads past water and fuel tanks in the nose to pressurized engine compartment.

Illustrations by Stan Mott



Mickey races against the calendar to team four engines for



Mickey's race against time dictated methodical planning. He built a complete steel jig to insure exact chassis alignment.

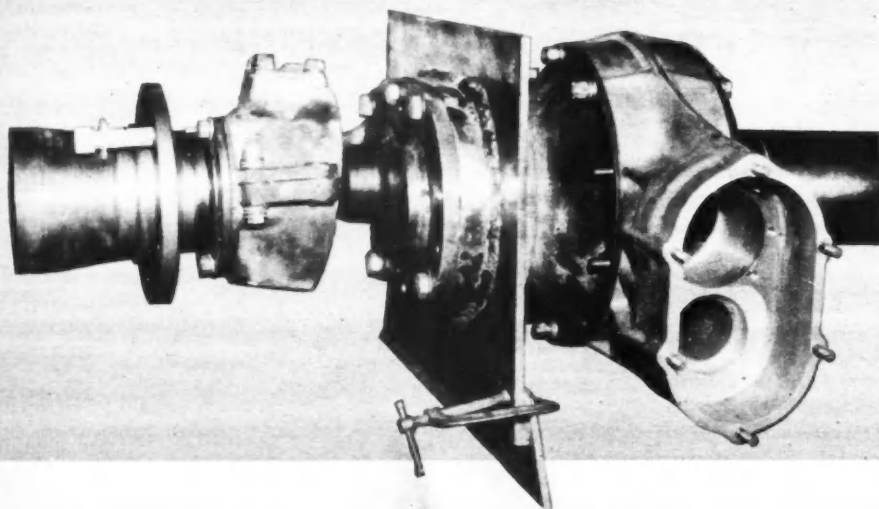
coordinated and catalogued all questions, answers and speculations — and there were many.

At this meeting every phase of design and construction was discussed. As the night waned into the last pre-dawn hours Mickey saw his car beginning to take shape. By dawn he knew his basic design was not only functional, but that with it he would have a better-than-even chance with his eventual race against time.

Just when things looked brightest a curtain fell, bringing the entire project to a halt. Donald Campbell, whose fantastic speeds on water in his jet-powered boat had rocked the racing world, disclosed plans to build a turbine-powered land speed record contender. It was to have an estimated ultimate

speed of around 500 mph. Almost simultaneously word was received that two other cars in the United States were being prepared for record assaults. The Arfons brothers, of Akron, Ohio, were building a machine around an Allison aircraft engine. Dr. N. H. Ostich, of Los Angeles, Calif., had begun construction of a chassis based on two aircraft jet engines for power.

Knowing that 500 mph was far more than he could expect from his planned machine Mickey debated as to whether to abandon the project. Then he found that Campbell's machine would require almost two years of construction and would not be ready for an attempt on the record before 1960 or later. The Ostich and Arfons machines were also still in basic



Ingenious arrangement of driveline was needed to achieve final drive of 1.3:1. Each of the four 500-hp engines drives through 3-speed Cadillac transmission, Cyclone quick-change, Thompson-designed individual wheel overdrive unit, modified half-track steering knuckle and special hub.

*Basic ch
gines in
ing, tub
roll-bar
will us
cams, h*

construc
his spee

To Th

to see if

By Ne

in hand.

He deci

produce

the cent

By Fe

comple

steering

ment of

the cock

over the

struction

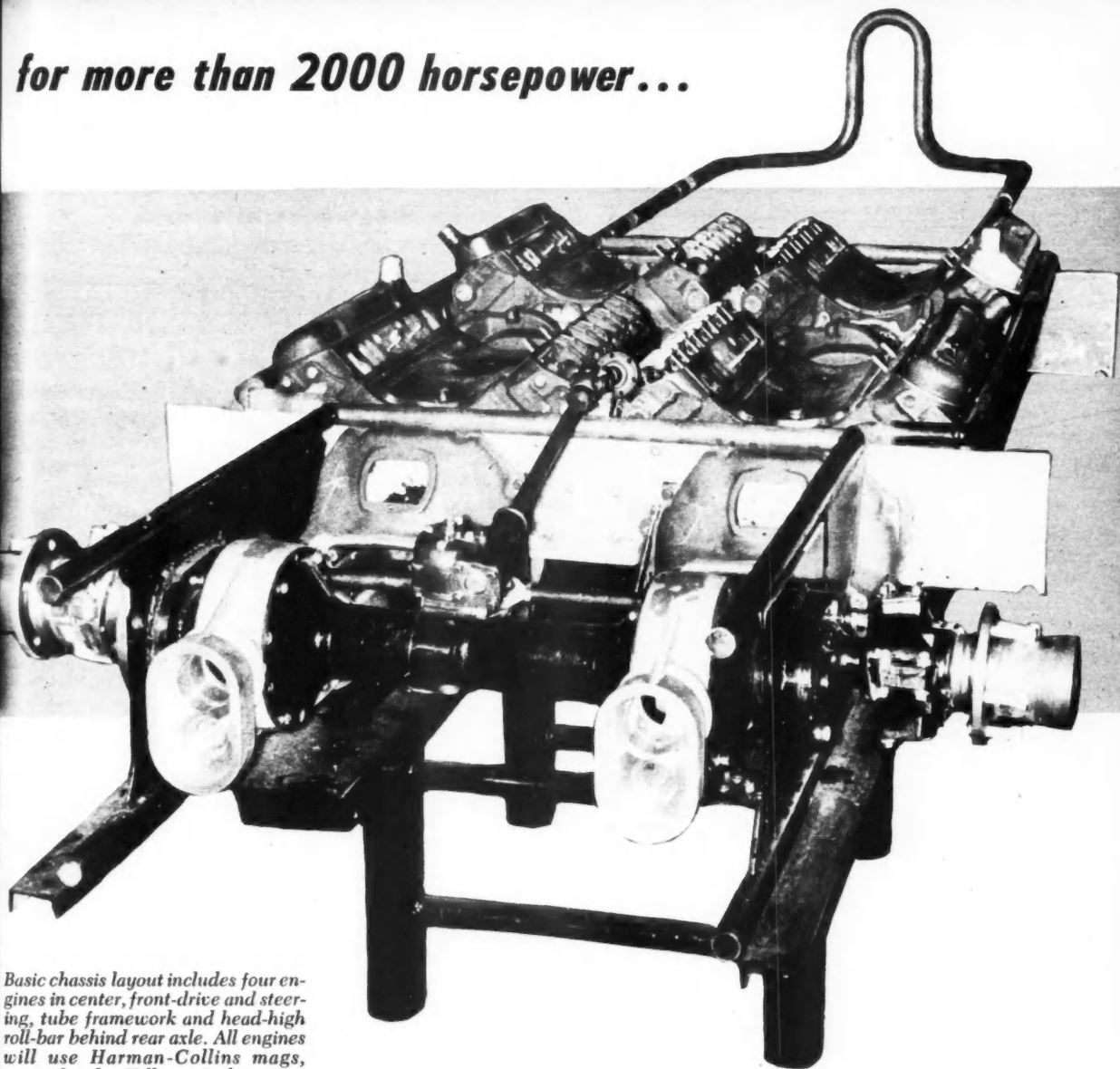
By Fe

for the c

the body

plans for

es **for more than 2000 horsepower...**



Basic chassis layout includes four engines in center, front-drive and steering, tube framework and head-high roll-bar behind rear axle. All engines will use Harman-Collins mags, cams, heads, Hilborn fuel system.

construction stages. There was still time then — if he made his speed attempt during 1959.

To Thompson it then became a race against the calendar to see if he would be able to race against the clock.

By November 1, 1958, Goodyear had the tire problem well in hand. Meanwhile Mickey was laying out the basic chassis. He decided to use four Pontiac engines, each modified to produce over 500 horsepower. They would all be mounted in the center of the chassis, with each driving its own wheel.

By February 1, 1959 the major portion of the chassis was complete and work had begun on all the lesser components: steering, brakes, water and fuel tanks, coordinated attachment of all linkage from four transmissions to one lever in the cockpit, air ducts from the nose to a pressurized chamber over the engines and the myriad details connected with construction and fitting of the streamlined body.

By February 15th George Hill, who had designed the body for the experimental machine, finished detailed drawings of the body for the new car. He had also completed full-scale plans for the wooden mock-up on which the aluminum body

shell was to be formed. A week later the nose section of the mock-up was delivered to California Metal Shapers in Los Angeles and actual work on the aluminum shell was begun.

Mickey plans to test the chassis under power with four stock engines by the middle of June. By the end of July the body should be fully mounted on the chassis and all modified engines will have been installed and thoroughly tested. That allows him only three weeks before official opening of the 1959 Bonneville National Speed Trials on August 23rd; a very narrow margin indeed. But Mickey, dominated by his burning desires and driven by almost neurotic forces, burns the midnight oil in his backyard garage every night of the week in his two-way race against time.

Thompson's complete and absolute dedication to the project may well result in a new Land Speed Record for the U. S. This summer, when Mickey climbs into the cramped cockpit of his home-built machine and roars across the barren salt flats of Bonneville, Utah, he will be out to achieve his greatest goal — that of becoming the fastest driver on the face of the earth.

/MT

Showpiece Customs



The 10th Annual National Roadster Show held in Oakland, Calif. brought out more than 130 sparkling custom entries. Here are some of the ones that caused the most excitement . . .

EVER SINCE CUSTOMIZING GAINED national popularity, owners of outstanding customs have been eager to display their pride and joy in show competition. This new breed of rugged American individualists has seized every opportunity not only to express their personal styling concepts but also to reveal an amazing skill in working with metal and fiberglass.

At the 1959 show in Oakland, Calif. — one of two such national events — more than 130 western customizers competed for awards for California, Western U. S., and National Class Championships — plus six Grand National Sweepstakes Championships. The Grand Award — for the second consecutive year — was won by the \$17,000 rod pickup "Ala Kart," owned by Richard Peters of Fresno, Calif.

Although other entries did not represent as much of a capital investment, each was a labor of love and was carefully spit-and-polished for the judges' eyes. On these and the following pages are shown some of the winners, along with other outstanding examples of the customizer's art.

continued



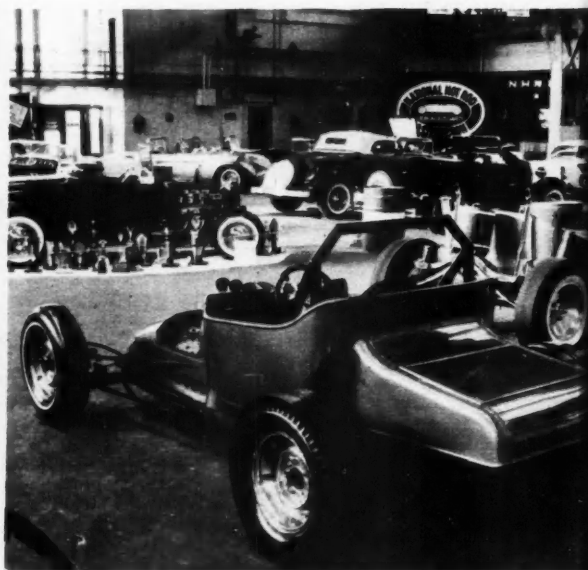
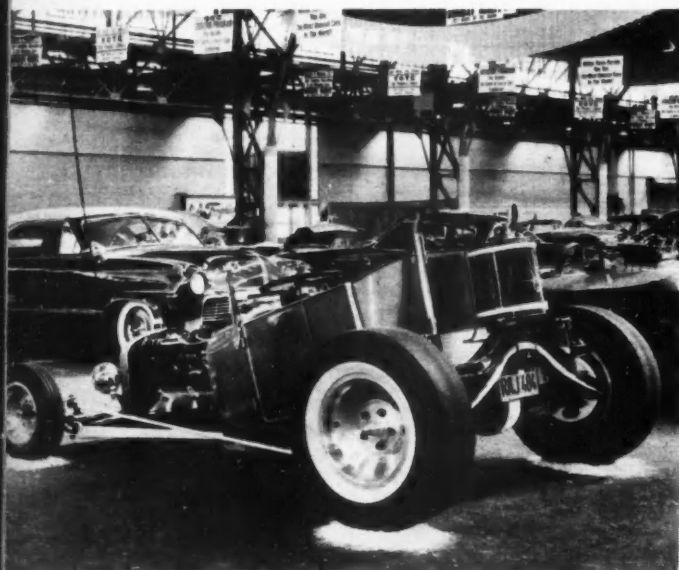
Sleek '57 Corvette pictured here — National Champion in the Competition Sports car Class — began in the battered state shown at the right. Rebuilder Bob McNulty repaired the bad fractures with fiberglass materials from a Taylor and Art Plastics kit, and added Lincoln quad headlights, Studebaker Hawk grille, and fins with quad tail lights. Owner Bob Moreira's reborn Corvette (also shown on cover) represents customizing at its best.

Showpiece Customs



Louwered rear panel of Jerry Anolik's '55 Thunderbird (also shown at right) overhangs 4 exhaust horns and bracket bumpers. Square roll bar adds safety to sports roadster used in daily transportation.

Two Model "T's": Larry Selmer's '26 (below, left), originally a 4-door touring sedan, has 16-in. rear wheels, 12-in. front, 5-gal. gas tank, 3-carburetor flathead. J. T. Winrod's "Glass Bucket" (below, right) is a '24, with complete fiberglass body on 2-in. tubular frame, 296-cu.-in. Mercury engine.



**for street use, competition,
or just plain driving sport—
everybody likes**

Roadsters



Uniquely sculptured front end houses 364-cu.-in. Cadillac engine with 4-71 GMC blower and '41 Cadillac transmission.



Bob McNulty's '55 Corvette, "The Shark," with hi-fi record player, won U. S. Western title.

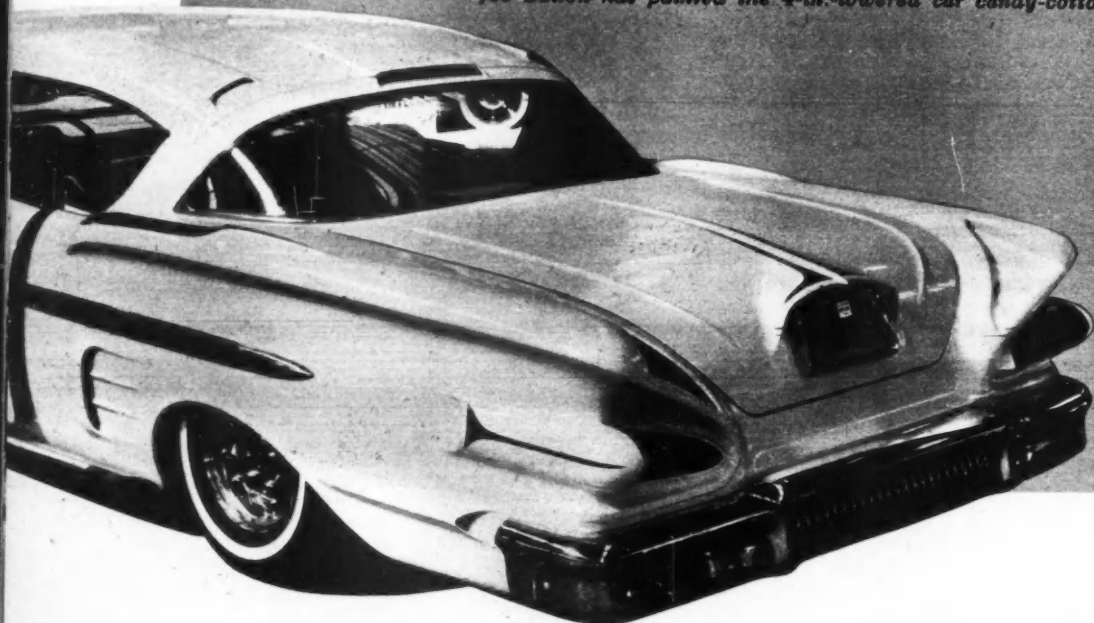
Robert Clews' '58 Corvette has "go" to match its good looks. Modified 283-cu.-in. engine develops 301 hp at 7200 rpm; 4-speed transmission, limited-slip axle.



Showpiece Customs



"New Type Show Car" was the award title won by Frank Caraway's entry. Appropriately named "Scoopie," the '58 Chevy has 30 air scoops fore and aft. Grille is composed of drawer-pull handles and knobs; reversed wheels are highlighted with bullets; tail lights are 1957 Chrysler. Customizer Joe Bailon has painted the 4-in.-lowered car candy-cotton pink.



coupes, hardtops, sedans, convertibles — they all can make good-looking *Customs*



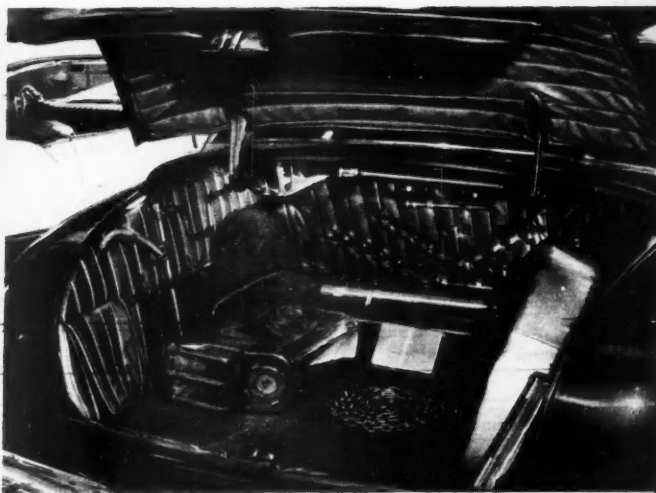
Custom interior with modified dash, handmade knobs and chrome garnish moldings helped John Macia's '54 Porsche 1500 Super win National Sports Coupe Championship.



'57 Imperial quad headlights custommodernize Leeroy Goulart's '51 Ford coupe. Top and cowl were cut to accommodate '53 Merc windshield; '55 Pontiac bumpers.



U. S. Western Champion title went to Dawn Smith for her '50 Mercury, painted emerald green with silver scallops. Silver pleated interior features unusual dash treatment

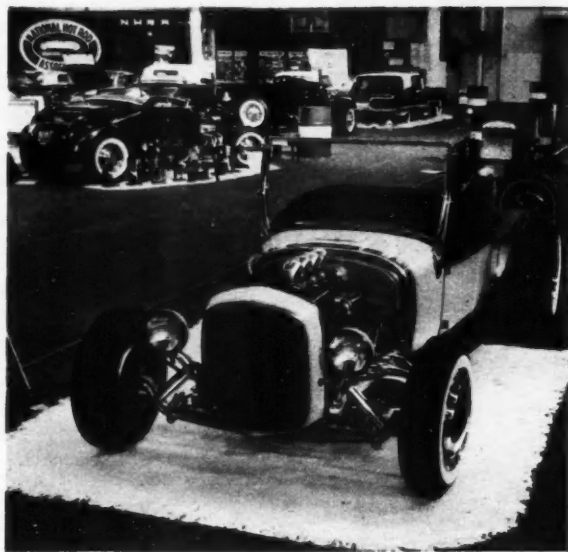


with hideaway instrument panel. Completely upholstered, tool-fitted trunk contains chromed gas can. Both bumpers are split; hood has 110 louvers set in curved pattern.

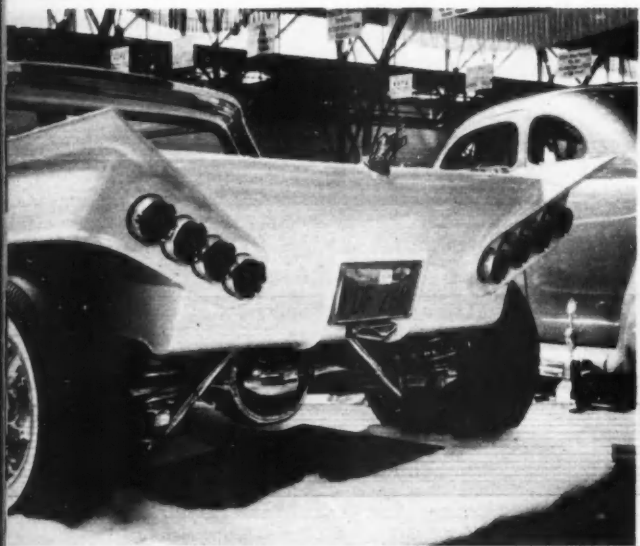
Showpiece Customs



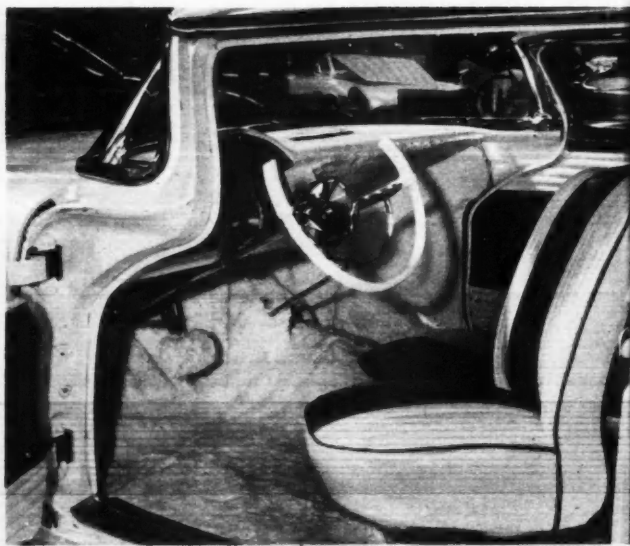
Starting with a '27 "T" and a '32 frame, Don Hentzell added "A" fenders. Hand-built knockoff wheels costing \$400, and 23-carat gold striping helped win state championship.



Voted "The People's Choice" by show spectators, Paul Buckingham's '27 "T" has an "A" frame shortened for 100-in. wheelbase, a "B" radiator, plus modified '48 Merc engine.



A '57 Ford Ranchero plus bold design led Richard Tiago to a U. S. Western championship in the rod pickup class. Bed has been shortened two feet; chopped top and lowering reduce height to 50 in. Undercarriage is completely



chromed. Cab features swivel bucket seats, white carpeting, airplane type steering wheel, floor-shift automatic transmission. Roof and bed are upholstered in white and orange naugahyde; exterior is painted orange. Car value: \$10,000.

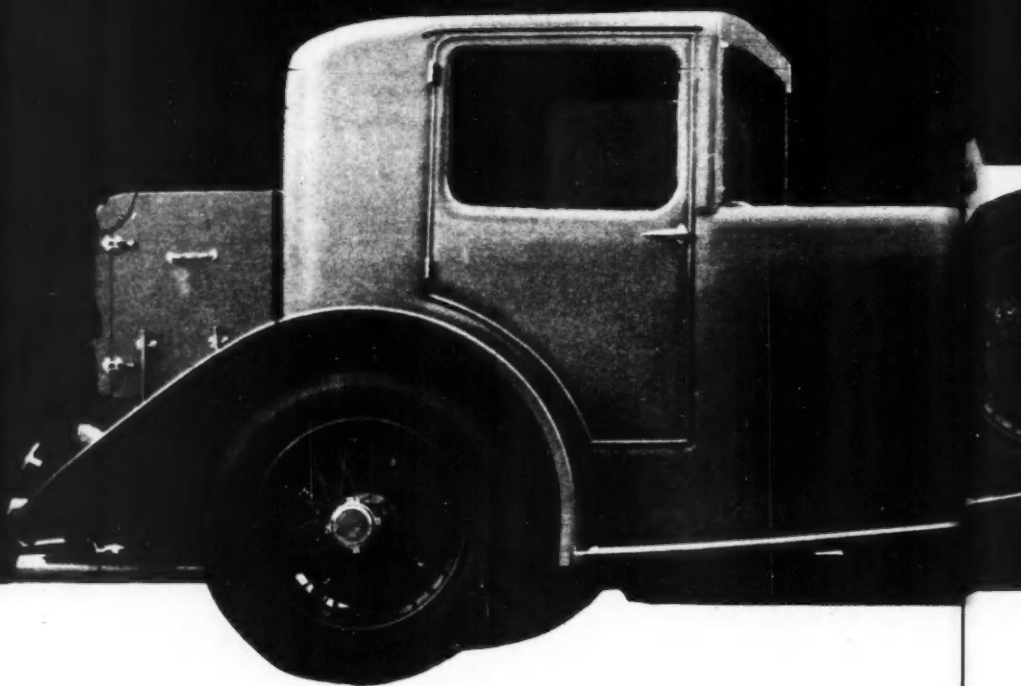
new or old, high or low, short or long—
there's a certain something about *Pickups*



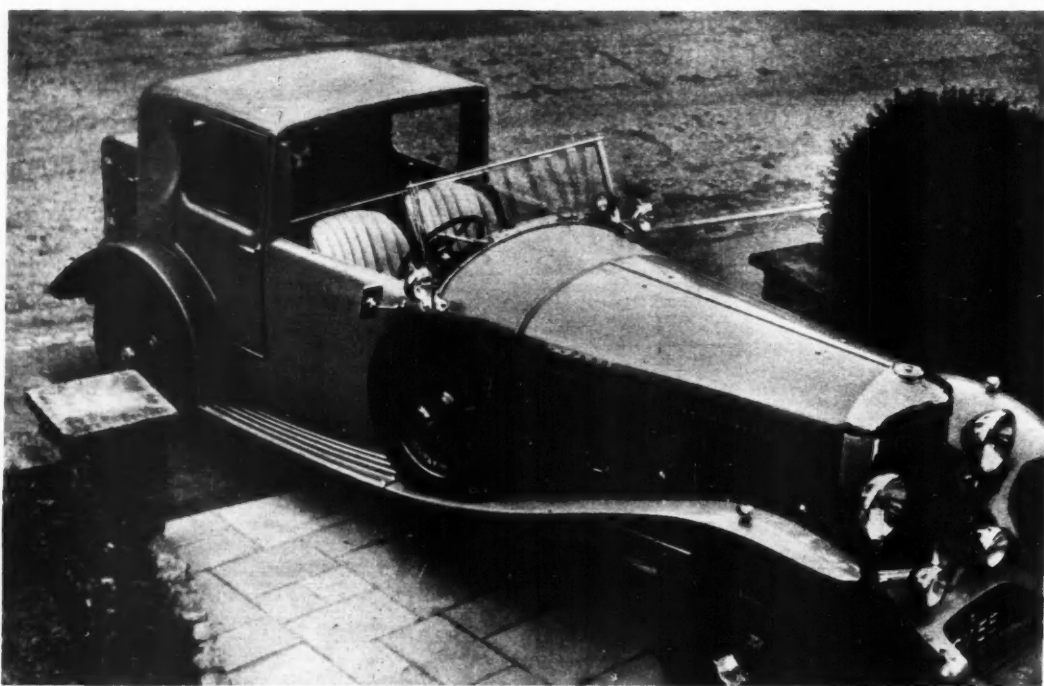
Originally a '50 Ford 2-door sedan, this converted pickup won Richard Gregg an All-America Feature Car Trophy. In addition to lowering 4 in., top has been chopped 5 in., body sectioned 5 in. Custom-made exhaust pipes have special heat guards, Lake plugs. Copper and white tarp complements gold and white pleated upholstery.

PHOTOS BY BOB D'OLIVO, GEORGE BARRIS



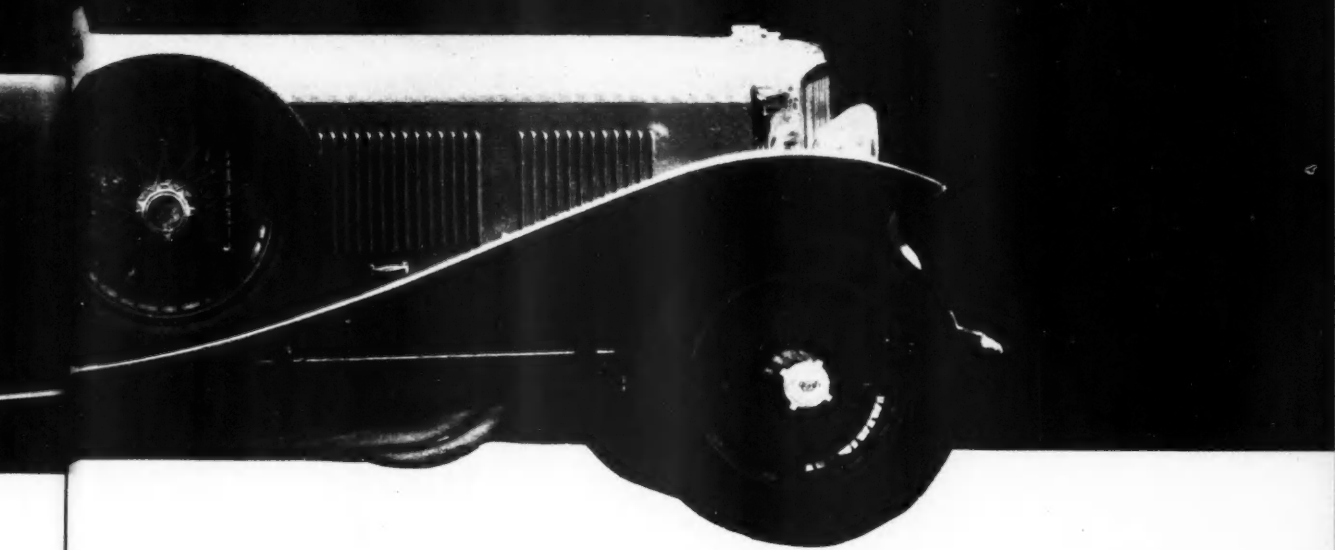


Unique trio in harmony: Be



Take the lengthy, regal lines of a Bentley coupe de ville, add the purring power of a Duesenberg Straight 8...and mix in five years of custom creativity by owner Brian Morgan of Birmingham, England. Result: the classically elegant B-D-M.

CLASSIC CUSTOM

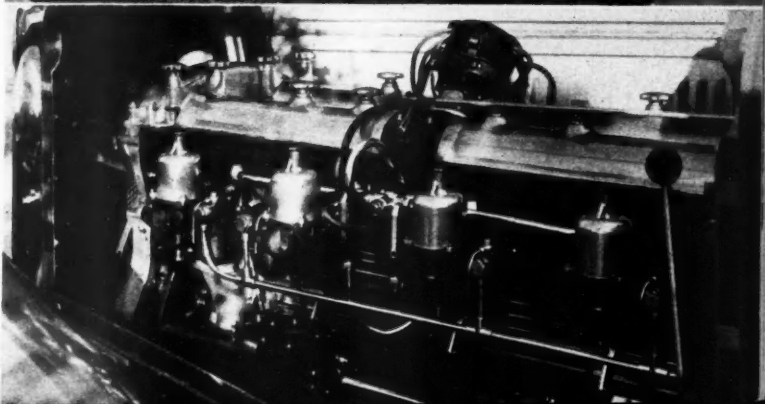
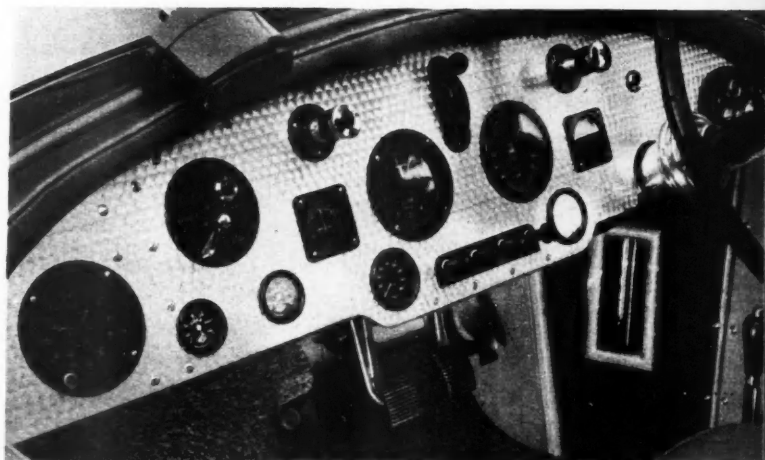


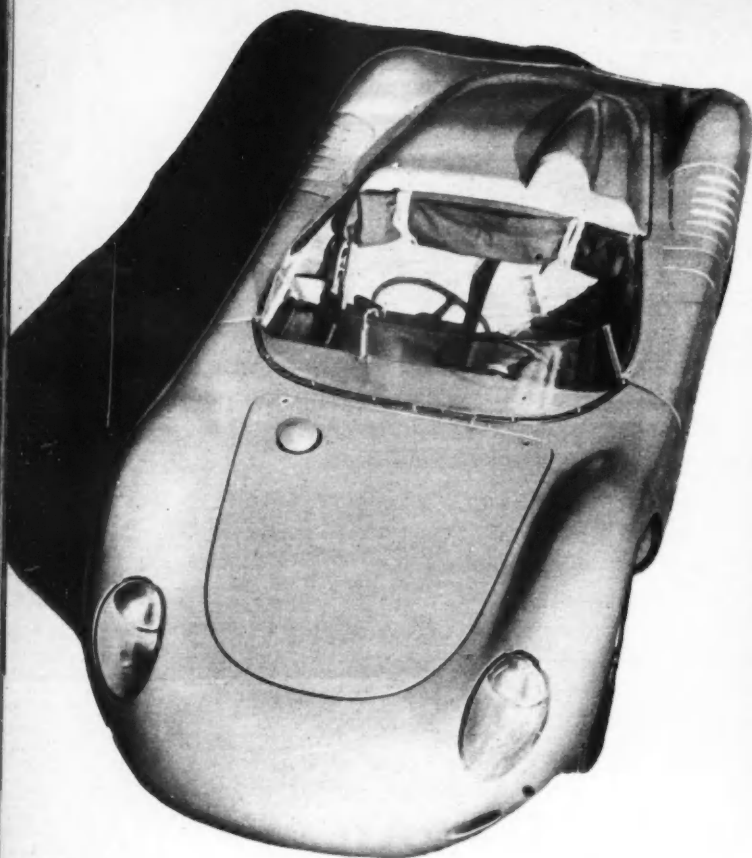
y: Bentley-Duesenberg- Morgan

B-D-M's instrument panel combines Bentley and aircraft gauges. Car has dash-controlled adjustable shock absorbers, twin electric fuel pumps, vacuum-assisted hydraulic valves, 4-speed gearbox replacing 3-speed.

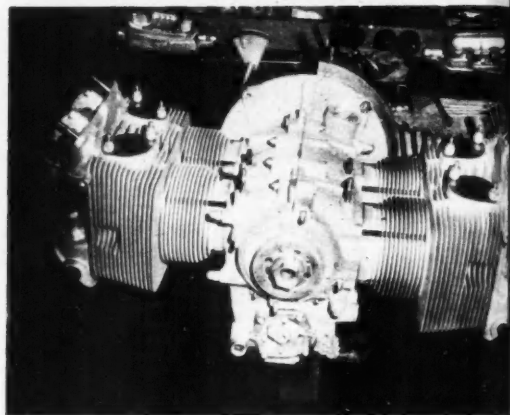
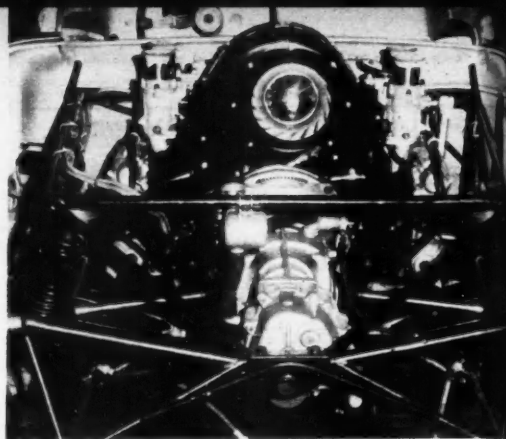
Photo story by Gordon Wilkins

Made about '32, 7-liter Straight 8 engine has two overhead camshafts operating 4 valves per cylinder, counterbalanced crankshaft with 5 bearings, 4 side-draft SU carburetors, gives 265 hp at 4200 rpm.



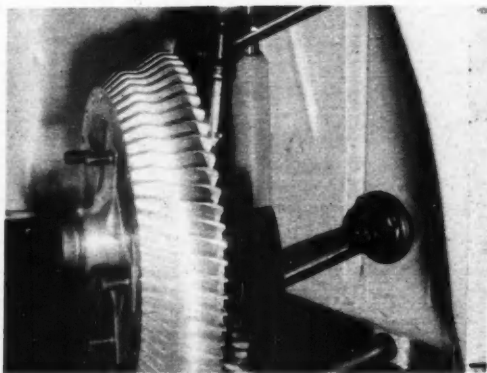


Only 20 to 25 Type 718s (RSK) will be made, but whole series is already sold out. Price: about \$8000.



Low-pivot-point swing axle is located by wishbones and radius arms. Five-speed gearbox/differential is mounted to rear of engine. Crankcase, pistons and cylinders are light alloy, cylinder bores chromed.

POTENT



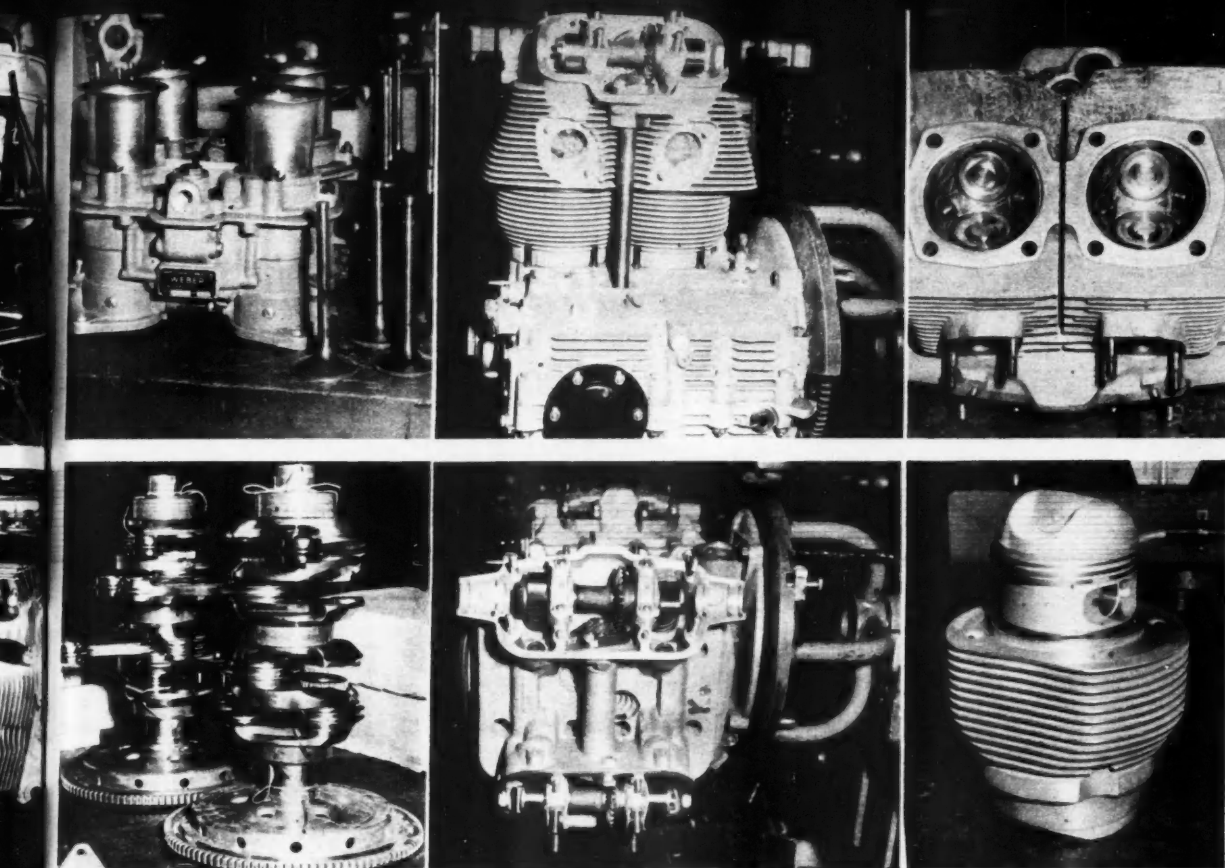
Porsche still hasn't gone the disc-brake route, apparently doesn't have to. Bi-metallic heavily-finned drums stop light cars deep in the corners.



Built-up main and re Two d



Low U-joint roll

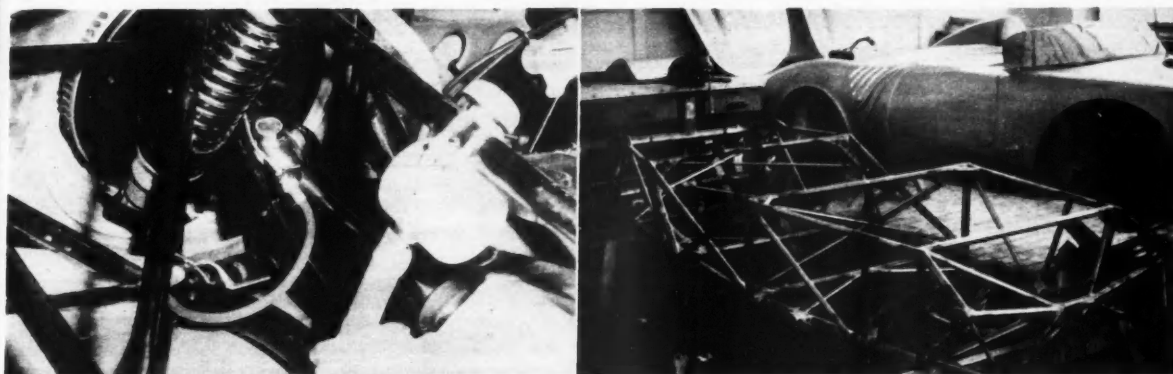


Built-up crank has ball-bearing front main to take thrust, rollers center and rear. Rod bearings are rollers. Two dual-throat Webers supply fuel.

Bottom view shows finned cylinders and sump. Kingshafts running off the crank actuate lower cams, upper cams by connecting shafts. Two bearings hold short cams rigid. Individual cylinders are fitted with liners, domed 4-ring pistons scooped for valve clearance. Siamesed heads have hemispherical chambers, 2 plugs each.

Photo Story by Günther Molter

PORSCHE



Low-pivot effect is achieved by member (enclosing U-joint) pivoting from bottom of rear to give low roll center. Tank is overflow header for drive gears.

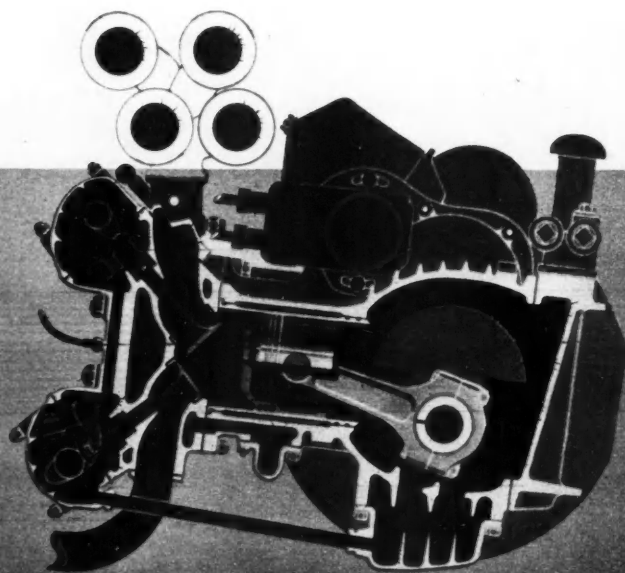
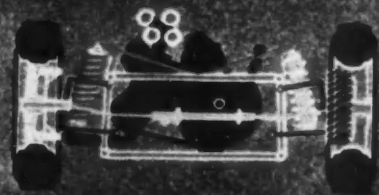
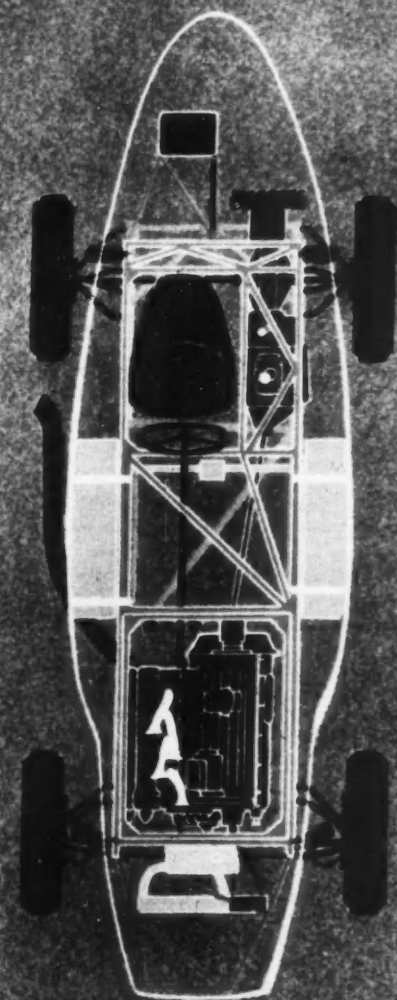
Space-frame, extremely rigid yet lightweight, is made from welded steel tubes. The two large upper and lower front crosstubes house torsion bars; rear has mounts for engine.

GRAND PRIX FORMULA I

**America's first attempt to
win the Manufacturer's
Championship of the World
is being made today by a
23-year-old millionaire.**

**With the success of his
Scarab behind him...
he may do it!**

by Len Griffing



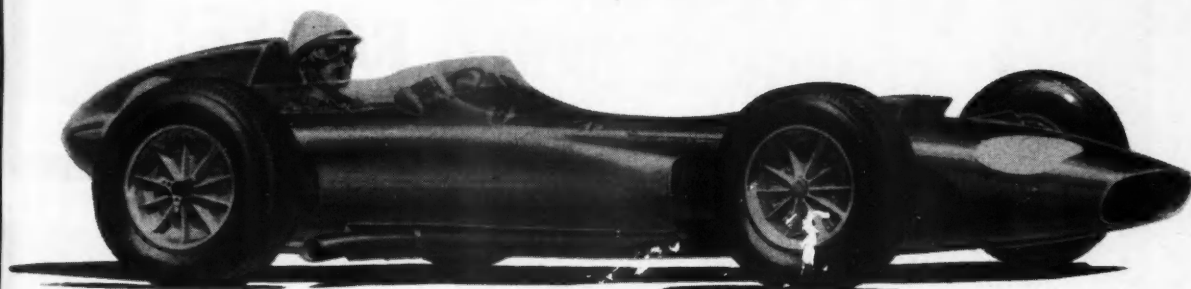
Four-cylinder in-line 151-cu.-in. engine is placed nearly horizontal. It utilizes the desmodromic valving principle, where one cam lobe pushes the valve open and another lobe pushes it closed. There are no springs.

SEB...
sp...
racing...
prosp...
was f...
Auton...
build...
At...
logic...
good...
lower...
which...
Lan...
shoul...
races...
tion o...
The...
to cal...

PHOTOS

...
p...
al

CHALLENGE BY REVENTLOW



SEBRING 1957, when Chevrolet introduced the SS Corvette, spotlighted big-time American entry into international racing. But after too few laps the SS retired, and with it went the prospects of an all-American team. GM was out, but the void was filled later that same year by the formation of Reventlow Automobiles, Inc. in Southern California, founded to design, build and drive internationally the fastest race cars in the world.

At the time, choice of the Chevy engine was dictated by logic. The F.I.A., however, no more than let the boys get a good start when the displacement limit for the '58 season was lowered to three liters—far below that of the Corvette engine, which displaces better than $4\frac{1}{2}$.

Lance Reventlow decided that the nearly completed car should be raced during the '58 season in domestic sportscar races. Then, all efforts could be concentrated toward completion of a new car that *would* be eligible internationally.

The men Lance hired had a lot of racing and speed experience to call upon: Chuck Daigh, Warren Olson, Tom Barnes, Dick

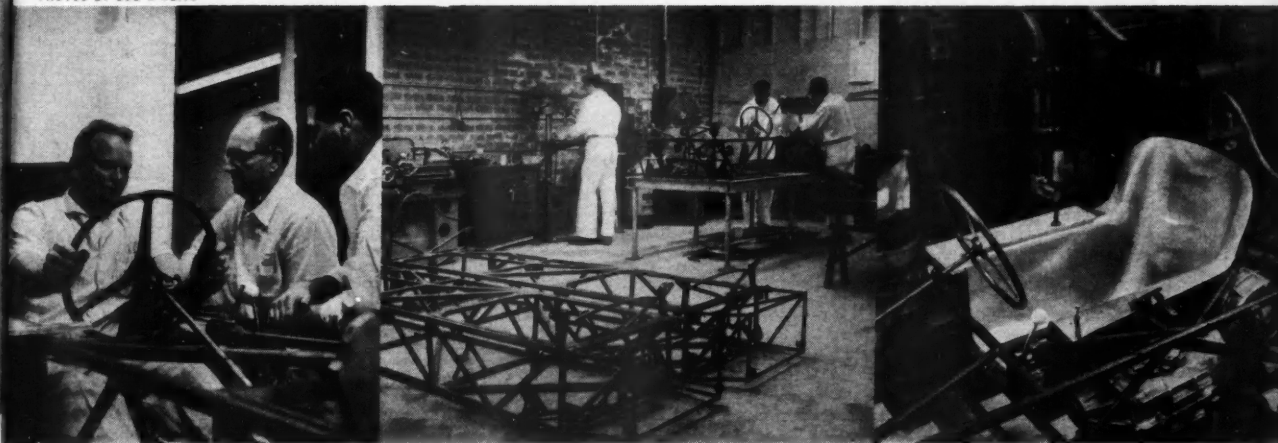
Troutman, Emil Diedt, Frank Coons, Marshall Whitfield, Jim Travers, Leo Goosen, and others—something like a million dollars' worth of talent. But fortunately, Lance had more than a million dollars' worth of money. To the joy of a few and the sorrow of a few others, at least one of the three Scarabs seemed to prove unbeatable wherever they rolled their snouts over a starting line.

Now, however, the Scarabs are being sold. The collective talents that conceived them are now directed toward the design, construction and victorious campaigning of an American-bred, American-produced and American-driven Formula 1 machine.

The chassis is being fabricated at Reventlow Automobiles in Los Angeles, while the engine components are being built by local machine shops to designs by Leo Goosen, Frank Coons and Jim Travers. The engine is a four-cylinder in-line 2.5-liter double-overhead-cam with a bore and stroke of $3\frac{3}{4}$ inches by $3\frac{3}{8}$ inches. Valve gear is desmodromic—there are no valve springs. In addition to the cam lobes that push the valves open,

continued on page 53

PHOTOS BY BOB D'OLIVO



"Yes, that feels about right." Chuck Daigh tries the seat and wheel position for size, as Emil Diedt and Dick Troutman stand by to make alterations. Chuck seems to like a big wheel well set out. Two fin-

ished chassis wait on the floor, while a third is fitted with racing appurtenances by Troutman and Diedt. Seat is real bucket, with gearbox-differential to the left. Note shortness of left axle shaft.

Victory of a great French car...

CITROËN FIRST AT MONTE CARLO RALLYE!

TWO STOCK CITROËN SEDANS TAKE FIRST AND FOURTH PLACE IN
WORLD'S MOST GRUELLING 2000 MILE ROAD AND MOUNTAIN TEST.

322 CARS OF EVERY MAKE ENTERED ONLY 129 FINISHED.

CITROËN OUTPERFORMS ALL OTHERS IN MECHANICAL ENDURANCE AND

DEPENDABILITY. PROOF-POSITIVE OF CITROËN'S TEN YEAR LEAD

IN AUTOMOTIVE ENGINEERING SUPERIORITY=



Paul Cotteloni and
Pierre Alexandre of France
in their winning Citroën 1019.

Not only is Citroën rugged, it is also "the world's safest car" . . . a functional beauty . . . comfortable . . . luxurious . . . economical. Citroën is the only production car featuring as **standard equipment** the unsurpassed comfort of a self-leveling **AIR-OIL SUSPENSION** ride with variable ground clearance . . . the precision control of road-hugging **FRONT-WHEEL DRIVE** . . . the extra-safety margin of **DISC BRAKES** . . . the ease and convenience of **AUTOMATIC JACKING** . . . and **33 MILE PER GALLON GAS ECONOMY!** No wonder the experts say . . . "See Citroën first before you place an order for any new automobile!"

A nationwide network of factory-trained Dealers throughout the United States and Canada Write for Free Road Test Reports and brochure.
CITROËN Cars Corporation • 300 Park Avenue, New York 22, New York • 8423 Wilshire Blvd., Beverly Hills, California

REVENTLOW'S CHALLENGE

continued

there are other lobes, acting through arms, that push them closed. Theoretically, there is no valve float, and the system worked with reliability and a good return when Mercedes-Benz used it on their 300-SLR's.

When the engine is dropped into the chassis, it will be mounted in an almost horizontal position, which allows a low hood line. General layout is somewhat suggestive of an Indy car. Engine is front mounted with the crankshaft parallel and nearly a foot to the left of the longitudinal axis of the chassis. A propeller shaft angles leftward and back to the five-speed gearbox, which is located to the immediate left side of the driver and is attached to the Halibrand quick-change differential case. Both are cast from light alloy.

Independent rear suspension consists of two unequal A-arms, the lower arm longer than the uppers. Springing is by coil, with tubular shock absorbers. Two unequal length half-shafts, with two constant-velocity U-joints each, send the power into the wheels.

The shortness of the left-side half-shaft will put some pretty mean stresses on the U-joints. Since the shaft is so short, lifting the wheel only a few inches will take it quite a few degrees from its nearly horizontal plane. The designers know this, and the U-joints are strong; however, we wouldn't be surprised to see the differential assume a more centralized position at a later date.

Front suspension is similar to that on the rear — unequal A-arms with the lower arm longer than the upper. Both are adjustable. They connect to the chassis by eyes, threaded and screwed into the arms. Threading them in or out makes the arms longer or shorter. And, there are combinations that allow wide latitude in camber and caster. The arms terminate at ball-joints, which clasp the spindle assembly. Coil springs again assume the load, dampened by tubular shock absorbers.

The chassis is strong and light, and it is hoped that it will contribute no more than 60 pounds to an ultimate dry weight of 1100.

Brake design is not yet finalized. Examination of a partially completed chassis by the writer would seem to suggest two disc units at the front and a single inboard-mounted disc unit at the rear. However . . . time will tell.

We expect the new car to be successful. Reventlow Automobiles, Inc. has talent and enough cash-on-hand to turn it loose—a combination hard to beat. If you don't believe it, ask the boys who race the Scarabs.

Project Ideas

Announcements of the first winners in the **MOTOR TREND-REVELL Custom Car contest** will be made in next month's issue.

If you're a late starter, you still have time to get in on it by writing for your application blank to:

Project Ideas
P.O. Box 212
Venice, Calif.

NEW

ignition analyzer kit

half the price
of comparable analyzers



MODEL IA-1

\$59.95

SHPG. WT. 20 LBS.

HEATHKIT

- easy to build
- locates ignition trouble
- shows adjustments necessary for peak performance

Here is a professional type ignition analyzer in "do-it-yourself" kit form to make your engine service and adjustment work easier. You can do a better job—and do it faster, with this new service tool. Quickly connects to engine to show complete wave cycle of ignition system and reveal troubles in plugs, coil, distributor, condenser, points, timing, etc. Comparable to units selling for more than twice the price. No electronic experience required for successful construction. Kit includes all parts, step-by-step instructions, and large pictorial diagrams. Send for details—or order your ignition analyzer now!

FREE 1958 CATALOG



Write for free catalog describing this and many other "do-it-yourself" Heathkits

HEATH COMPANY • BENTON HARBOR 19, MICH.

a subsidiary of Daystrom, Inc.

name _____

address _____

city & zone _____

state _____

MT previews



MG MAGNETTE: 82 MPH FROM 68 HORSES

WITH ALL FOUR of its slim pointed corners in full view from the driver's seat, the Magnette is an easy car to maneuver in traffic and parking places. Steering is quick, with three turns lock-to-lock, yet remarkably light when parking and shock-free on bumpy road sections. On the road, the car seems to follow the direction of the front wheels without plowing or verving. Corners can be taken fast with little roll, and it is quite difficult to provoke rear-end break-away, even when slinging the car quickly around right-angle bends slippery with mud. When it does slide, or snakes under hard braking, correction is rapid, but there is a sideways flick of the body which might be suppressed by increasing the roll stiffness at the front.

Brakes showed up well under adverse conditions. They were used hard after passing through several stretches of flooded road and showed no deterioration. They stopped the car quickly with low pedal pressure. All pedals are pendant, with the accelerator a bit too short for heel-and-toe action, but it is possible to brake with the heel and open the throttle with the toe for a fast downshift.

The short central gear lever is a pleasure to handle, and the synchromesh on the top three is very effective. Second gave an indicated 46 mph before valve bounce, and third an indicated 74 mph, making this a useful gear for overtaking or for fast motoring through sharp bends.

The car I tried was fairly new but on a short straight I saw 82 mph on the speedometer with the car still accelerating. I am told the absolute maximum is in the region of 85 mph. It would be even better if the Magnette could be fitted with the MG-A engine developing 72 bhp, but BMC policy has decided otherwise. Acceleration is brisk and although the engine is quite audible it is not noisy. The ride is level and by no means harsh.

The main difference between the Magnette body and those used for other BMC cars of this size is in the tail fins, which are shorter with rear edges sloping forward. They give the car a fleetier line.

General interior finish is of usual MG standards. The single front seats have big broad backrests and cushions deeply shaped for lateral support when cornering fast. The rear seat is comfortable too, with side armrests and deeply upholstered backrests which make it virtually two separate bucket seats when the center armrest is down. Rear legroom is good and entrance is easy; headroom is average at rear, good in front.

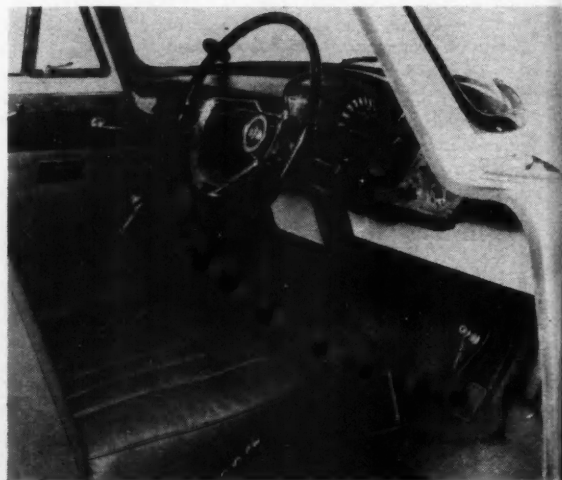
The new MG offers the pleasure of MG ownership plus crisp modern styling for those who need a four-door family-model sports-type sedan. It is pleasant to drive and should post some interesting average speeds.

—Gordon Wilkins



Though the Magnette is designed by Pinin Farina, continuity of the MG styling is retained in the grille.

Interior is rug- and leather-covered, with readable instrument cluster, pendant pedals and smart styling.





New 3-liter Ferrari sports-racer will represent factory during '59 Sports Car Championship events. Farina has styled a more streamlined body than earlier models. V-12 engine has 6 dual throat Weber carbs, develops just over 300 bhp at 8000 rpm.

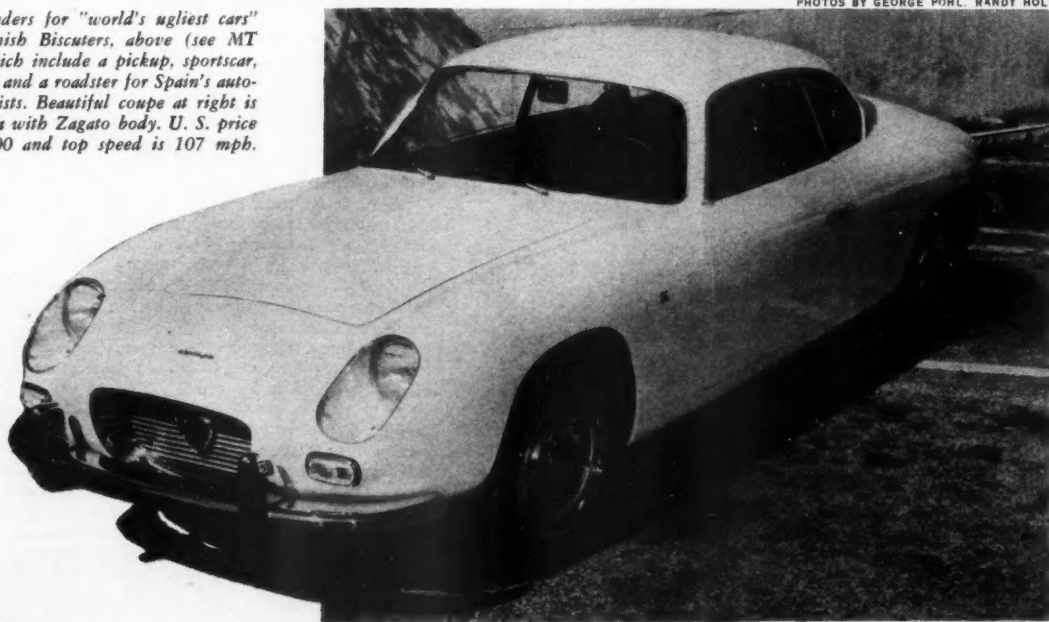
SES



con-
ille.
able
ing.

Strong contenders for "world's ugliest cars" are tiny Spanish Biscuters, above (see MT Dec. '58), which include a pickup, sportscar, station wagon and a roadster for Spain's auto-starved motorists. Beautiful coupe at right is Lancia's Appia with Zagato body. U. S. price is about \$4500 and top speed is 107 mph.

PHOTOS BY GEORGE POHL, RANDY HOLT





MT PREVIEWS continued

Probably the most flattering end of the Turner is the simple front, revealing the crisp competition-inspired lines around the grille and the low silhouette.

TURNER: SHY ON LOOKS, BUT A REAL GOER!



It's doubtful how much good the fins will do aerodynamically, but they are distinctive. Bumpers are fragile, but 'glass body is strong.



Since Turner is a race car, weather equipment is more legal than actual. With roof erected, there isn't space enough for long hair.



A race car isn't going to carry much luggage, and the Turner's trunk is appropriately commodious. One spare and a little air is it.

EASY TO DRIVE—easy to look at—easy to keep" is a two-thirds correct slogan devised by promoters of the Turner sportscar. The middle description—"easy to look at"—is a little unrealistic. This, plus the fact that when the top is erected the middle bow rests disconcertingly on one's scalp, is about the only thing *not* "easy" about the Stage I Coventry Climax-powered Turner—except for those who think the \$3170 (p.o.e. Cleveland) price tag too high for a single-overhead-cam-engined car.

Distributed by Tri-City Sports Cars, Route 3, Masillon, Ohio, with a sub-distributor in New York and dealerships being negotiated on both coasts, the Turner is available in four varieties. Lowest-priced of these is the Standard, using an Austin A-35 engine with no modifications. With dual carburetors, suitable camshaft, higher compression, and 60-hp output, the SPR 60 lists at \$2635. Next are the Stage I and the Stage III, at \$3370. A 95-bhp Stage II model was attempted but eliminated upon development of the Stage III.

With the Stage I car we logged a total of 156 country miles on the open roads abounding Akron, Canton and Masillon with several townships in between. The car definitely was "easy to drive" and it was a thrilling experience.

Assured by Distributor Dale E. Smith not to fear over-revving, we took the car to 7500 (tach goes to 8000), not once but several times in first and second gears. Speedo indication in first—with a calibrated instrument—was 45 mph. In second the speedo needle caromed to an indicated 80 mph—in second gear! In third gear we leveled off at 6500 rpm and indicated a hair past 90 mph. By this time we had run out of country road, but we stopped testing with the opinion that the car will turn an honest 115-20 mph.

Brakes as installed are satisfactory for everyday driving; however, Girling disc brakes are optional. I would say they are mandatory for competition work. Fade on road linings was quite noticeable after six 60-mph stops.

Steering is rack and pinion, 2¼ turns lock-to-lock. Independent front suspension is by coil springs and Austin A-35 main components, with Armstrong shock absorbers. Rear suspension is by A-35 live axle on trailing arms sprung by a laminated torsion bar, dampened by telescopic shocks and located by a Panhard rod. Wheels are 15-inch steel disc (wire optional).

The fiberglass body mounts on an 83-inch-wheelbase tubular frame. Engine compartment access and luggage space are average for a small car. Dry weight is 1175 pounds; overall length is 138 inches, overall width 54 inches.

The interior features leather-covered bucket seats and leather door paneling. Top of dash extends inward about four inches with rolled foam padding. Steering wheel sits a trifle high, considering the limited headroom, but shift lever is well placed. Pedal location could be improved by a bit more separation. Instrument cluster is well placed and readable.

Best of all is the performance of the Stage I engine. The car's discomforts seem to disappear upon the realization that here is a driving machine with more fortitude than its designers had imagination.

—Steve DuCosta



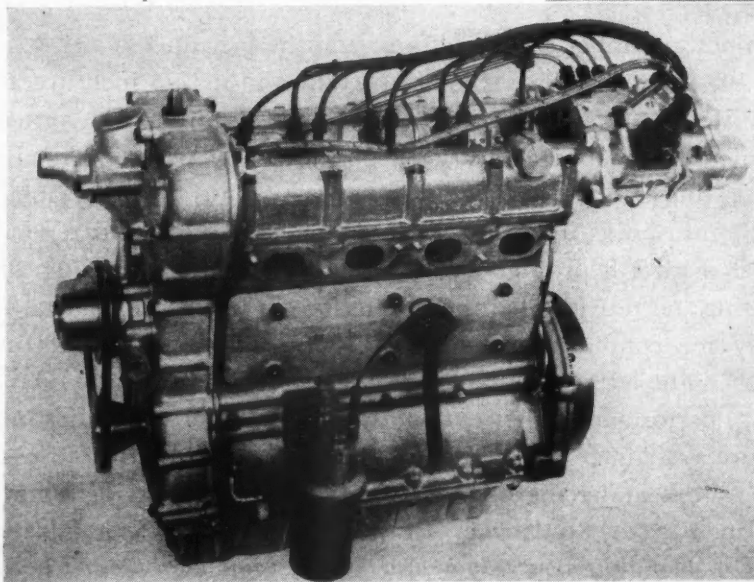
Skoda Felicia is from Czechoslovakia, has 1100cc engine which turns 87 mph, develops 54 bhp. Michelotti has designed detachable hardtop for car.



East Germany's Wartburg sport coupe is well styled, has 3-cylinder, 2-cycle engine which develops over 50 hp from 900cc. Performance is good.

PHOTOS BY GUNTHER WOLTER

Unusual mating is Cooper at right with Borgward Hansa 1500 RS engine shown below. Engine with twin-overhead cams and Bosch fuel injection was very successful for Borgward in European hill-climbs last season. At the wheel of the hybrid race car is Fritz Juttner testing the combination on the high-speed Bremen-Hamburg autobahn.





PACE-SETTING DESIGN . . .

THE *LARK* ² BY STUDEBAKER

➤ The Lark combines a number of unusual qualities in a manner that is a tribute to engineering.* ➤ Its 108 inch wheelbase is long in relation to its 175 inch overall length.

➤ There is virtually no overhang, front or rear, so that handling and cornering is of continental calibre while interior space (seats six) is typically U.S.A. ➤ Ride is comfortably firm, but not hard, due to an interesting suspension system.

➤ Variable rate coil springs surround hydraulic shocks up front, while asymmetrically mounted semi-elliptics combine with outward angled hydraulic shocks at the rear, boost cornering ability, cut "squat" when accelerating and provide all around stability. ➤ The economical 170 cu. in.

"6" utilizes an entirely new combustion chamber shape for amazingly smooth combustion on low grade fuel. ➤ The V-8 is available with 4-barrel carburetor and dual exhausts.

With this combination, performance is *exceptionally good*. The car really digs in and goes.

➤ Many options are available. ➤ And if you enjoy tinkering with your own engine, The Lark's a pleasure. Peek under the hood and look at the labor-saving working space.

➤ In fact, drop in at your Studebaker Dealer's and enjoy a demonstration drive.

The Lark is available as a 2-door and 4-door sedan, hardtop and station wagon.

ADJUST
and m
indiv
France

nolia E
are un
colors:
aminec
de Par
all" cas
able ei

MESSKO
many,
that g
most re

mark to
dial typ
type w
made, f
at \$2.9
Empire

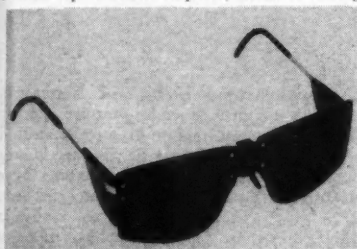
HEAD-O
brought
ready t
about \$
but its
than o
live dr
impact
driver
works.

It's a
the cras
When
object,
passeng
the inst

MTRENDS IN NEW PRODUCTS

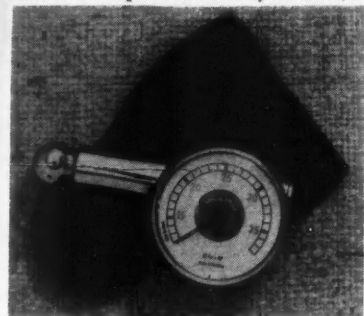
Information below is based on news releases from the manufacturer or distributor. Motor Trend has not tested or necessarily endorsed the products. Tested items are featured in our Product Use Tests (see next page).

ADJUSTABLE SUNGLASSES, where the nose pads and metal bridge can be contoured to the individual's face, are being imported from France by Warner Imports, 4015 W. Mag-



nolia Blvd., Burbank, Calif. Panlux sunglasses are unbreakable, and are available in two colors: green and amber. They have been examined and passed by *L'Institut D'Optique de Paris*. Individually packaged in a "carry-all" case, glasses are priced at \$3.95, are available either with or without sideshields.

MESSKO TIRE GAUGE, imported from Germany, is an improvement over older imports that gave pressure in atmospheres. This most recent import has an easily readable line



mark for each psi. Two models are offered: dial type with gauge and needle, or pencil type with sliding bar. Both are metal, well made, packaged in a leather case. Distributed at \$2.95 each by Omega Service Parts Corp., Empire State Bldg., New York.

HEAD-ON CRASH SAFETY SEAT has been brought from the development stage and is ready to enter production. It's expensive—about \$500—and you can't order it by mail; but its designers feel it's no more expensive than one crash. They've tested it with a live driver several hundred times at an impact velocity of 50 mph. Each time the driver emerged unscathed. Here's how it works.

It's a rather hackneyed truism that it's not the crash that kills you, but the sudden stop. When a moving vehicle hits an immovable object, the vehicle stops *right now*, but the passengers keep going. They are stopped by the instrument panel or the windshield. The

force that propels them is their own inertia.

Now, reasoned a man named Roger Racine, who runs the Protect-O-Matic plant at 112 Killewald Ave., Tonawanda, N.Y., if this inertia could be neutralized, the passenger and driver would stop right along with the car and no one would be hurt. He designed a system that gets you off with a skinned knee and a sore neck, at worst.

A "trigger bar" is mounted to the front of the car, and is actuated by impact. When actuated, it triggers hydraulically-powered plungers mounted to and under the front seat. Within .045-second after impact the seat pivots backward. Thus, the hydraulic cylinders create a force equal and opposite to



body inertia, each cancelling out the other. The driver and passenger are weightlessly suspended as the vehicle crumples in front of them.

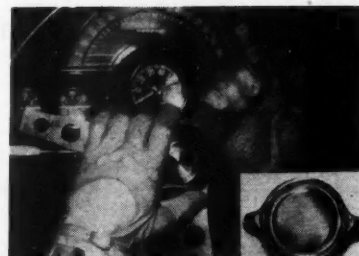
By virtue of its purpose Protect-O-Matic is expensive; any worthwhile safety device requires the best possible in design, material and construction.

They'd like to know how *you* feel about it. If you think you would be a potential customer, drop them a line.

CUSTOMIZING COLORS—the paint that was developed for custom car kits—is now available for a multitude of applications on full-size cars. Such hard-to-gets as Imperial Burgundy, El Dorado Cinnamon, and many of the popular metallics, such as T-Bird Blue, can now be secured in small-change 10-cent quantity for such specialized use as striping, trim, etc. If you can't find them at your regular outlet store or hobby shop, write to Pactra Chemical Co., 1213 N. Highland Ave., Los Angeles 38.

14-INCH REPLACEMENT TIRE, designed for smooth and quiet highway cruising and a good grip on wet concrete or asphalt, has been announced by Corduroy Rubber Co., Grand Rapids, Mich. Corduroy has been in the replacement tire business since 1919, and this newest addition to their line is for '58 and '59 autos, either black or white sidewall, tubeless construction.

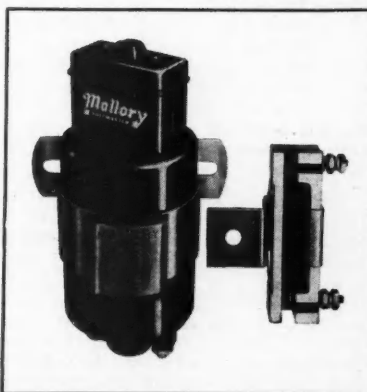
FULLY-VENTED DRIVING GLOVE, called the Le Mans 711, is hand-tailored from imported



leather. Nylon thread is used throughout, and there are no "seconds." Palm is padded for grip and long wear; back is open, fingers and knuckles vented; and wrist strap is adjustable. Choice of black, brown or beige; sizes and styles male and female. Closed-back models at \$8.95; or send glove size and \$6.95 for open-back model to Le Mans, Dept. 13, P.O. Box 722, Baltimore 3, Md. Order now and get a bonus "gold" radiator cap (inset).

LUBRICANT AND ADDITIVE LINE, manufactured by the Pyroil Co. since 1929, has been augmented by three new items: RX-1 is an oil/fuel additive that purges deposits from sluggish engines; RX-2 is an oil additive that helps you live with a worn engine; RX-3 is a stop-leak and conditioner for automatic transmissions. All are claimed to improve the extreme-pressure and viscosity-stabilizing features of the lubricants.

LONG-LIFE COIL by Mallory is radically different from previous coils. The high-voltage winding is impregnated under vacuum with an epoxy resin that serves as both permanent insulation and a practically indestructible



case. The resin insulation does not deteriorate, and the case is resistant to everything, including air. Available in either six- or 12-volt version, Mallory's testing shows the coil superior to any of past manufacture.

More power from small engines with Paxton Supercharger



THE GRANATELLI BROTHERS—Andy, Joe and Vince—former Midwestern race car owners and promoters, sold out their Granco Automotive Specialties Co. in Chicago and acquired the Paxton Products Co. in Santa Monica, Calif. Paxton is the company that manufactured McCulloch

superchargers—it still does, but the Granatellis now own it. They have been turning out the same reliable centrifugal blowers for a wide variety of American cars and are continually striving to improve an already good piece of performance-increasing equipment.

They have also been doing a lot of research and development on superchargers for smaller engines, basically in imported cars. They believe that most of the small engines can be improved by supercharging without seriously shortening their life, but qualify this statement by saying this depends largely on one factor—the driver. Be that as it may, the current model now ready is one for Volvos.

Just to be sure there was nothing special involved other than bolting on the supercharger, we secured a perfectly stock demonstrator PV-544 from Kramer Motors in Santa Monica. This car had 2000 miles on it and was still a little tight because of the Swedish .002-inch factory piston clearance.

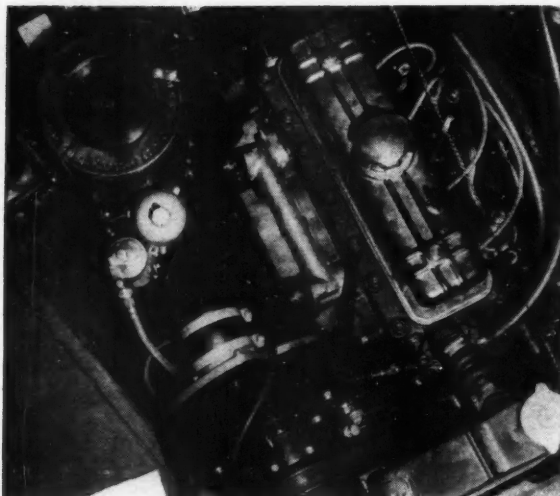
It was a beautiful morning out on Riverside Raceway's straightaway and we hooked up the fifth wheel, wound the stop watches and were on our way. Final tabulation of our averages produced the figures shown in the table below.

	Without Blower	With Blower
From Standing Start		
0-45	8.7	7.1
0-60	15.3	12.1
Quarter-mile	19.6 and 68 mph	18.1 and 73 mph
Passing Speeds		
30-50	6.1	4.3
45-60	6.7	5.1
50-70	10.8	8.0
50-80	—	14.3
Fuel Consumption		
Steady 50-mph speed	33 mpg	26.6

Our usual top passing speed is 50-80 mph, but it just took too long to get to 80 miles per hour before running out of level strip. We also kept the engine rpms under 6000 but did not have to be too careful in the higher gears as it took a long time to tach 6000 rpms in third gear.

Andy Granatelli and his crew then took over for a day to install the Paxton blower. As shown in the illustration, this is a standard impeller unit with constant-speed belt drive that mounts alongside the engine, bolting right onto the regular log intake manifold. The production model will have its own induction tube and will not use the stock manifold, bolting instead to the head. This will simplify the construction and allow the use of one or two carburetors. The present setup is to make use of one of the stock Volvo SU units and one large air cleaner. Paxton recommends the use of Lodge platinum point plugs and a set of HANP's was installed to handle the higher combustion chamber temperatures.

Back to Riverside Raceway, some more tests, and some eye-opening results. With a dash-mounted vacuum-pressure gauge, normal cruising was all done on the vacuum or negative manifold pressure side of the meter. A push of the foot on the accelerator provided supercharged manifold pressure at will, accompanied by a surge of power and acceleration that pushed us back into the seat. Even with the tight engine, rpms over 6000 came as easily as depressing the throttle. The figures came close to matching those of some of our big domestic V8-engine-powered cars.



The standard 50-80 mph passing speed was now easy to reach in the level distance available as the blower really came in at the higher engine revolutions and full-throttle operation, providing an indicated 10 pounds of boost on the gauge.

Both series of tests were run with two passengers, each weighing about 175 pounds, stock exhaust system, spare tire, and towing a fifth wheel.

A California electronics engineer has a certificate from San Fernando Dragstrip showing he turned a quarter-mile speed of 78.80 mph with an elapsed time of 16.05 seconds to set a Class E modified record at this strip in his Paxton-blown Volvo. This car had 12,000 miles on it and according to the owner, was just starting to loosen up. He carried no spare, and had a Lakes plug that gave him a straight exhaust. Engine rpms in each gear (through the traps in third) were 7500. The pulley ratio on the blower gives an impeller speed of 48,000 rpms at this engine speed, but a built-in reservoir, using Hydra-Matic transmission oil, provides adequate lubrication for long blower life.

Blower installations for other imports will be available just as fast as the Granatelli boys can design adapters. Just about anything that has a fan belt can be supercharged by Paxton, due to the compact construction of the blower housing. Currently available is a Renault kit, selling for the same price as the Volvo unit, \$399.50 plus a \$50 installation charge. Address all queries to Paxton Products, 929 Olympic Blvd., Santa Monica, Calif.



The reports below are based on actual tests by MOTOR TREND'S staff, and when necessary, on observation and control of outside test facilities and laboratory analysis. MOTOR TREND'S seal of approval appearing with the test report or in any future advertising of the specific item tested by us, means that the product has lived up to the manufacturer's claims for it.

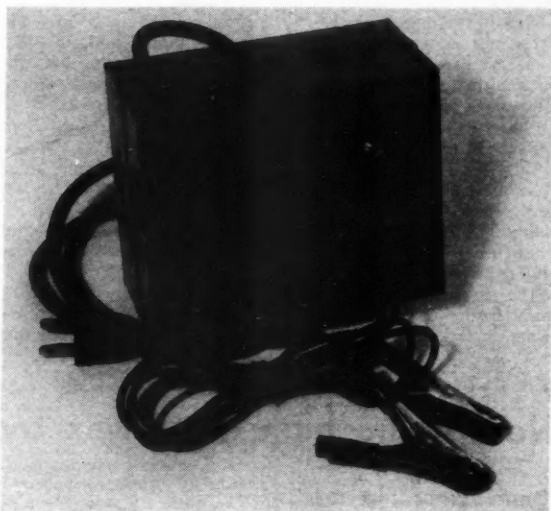
Safe and simple battery charging with low-cost Mitymite

SIX- OR 12-VOLT STORAGE BATTERIES

can be kept up to full charge with a small inexpensive battery charger that works off ordinary 110-volt house current. The Mitymite, a product of Barfield & Co., 3233 W. 36th St., Chicago 32, Ill., is a rectifier-transformer "trickle" type charger that will give your battery a slow overnight boost of power that may mean the difference of whether your car or boat fires up when you are ready. The unit measures 4 x 5 x 2 3/4 inches, has a selector switch for six- or 12-volt batteries, and an indicator light that lets you know if battery clip polarity is correct, if there is a short, and if the voltage selector switch is in the correct position. Current draw is very low as the output is only 3/4-ampere at 115 volts.

The best thing one can say about a product is that it works, and Mitymite does that . . . simply and without complications. It can be left on without fear of overcharging the battery and the battery does not have to be removed if it is in position where the charger clips can be attached. One word of warning, however: do not disconnect the charger plug from the 110-volt power source without removing the battery terminal clips or the battery charge will filter back through the charger and run the battery down.

Mitymite, ideal for boats, trucks, autos, portable recording or camera battery charging, carries a one-year guarantee, and is priced at \$9.95. It is available from some radio supply houses or direct from the manufacturer.



Automatic transmission seals conditioned with Dri-Powr



TRYING TO STRETCH a little more mileage out of that leaky automatic transmission? Dri-Powr Co., of Azusa, Calif., has a fluid additive that may stop your automatic transmission oil from leaking past seals that need replacing.

We say "may" because that is what Dri-Powr claims. They make no fantastic statements to the effect that their additive will positively stop leaky automatic transmissions, for they know, as any transmission expert will tell you, that these power transmitters use neoprene seals front and rear. This is the best type of seal currently available but while they do a good job, their life at the high temperatures of the oil they hold back does have a limit. As the heat begins to mount, hard varnishes and other residue deposit on the neoprene cause them to lose their ability to hug the spinning shaft tight enough to hold back the nearly 90 pounds of pressure built up inside, and they leak.

In the early stages of this process, small deposits of oil on the garage floor each morning should be warning that the seals are leaking. Replacement of a set of these neoprene rings (which themselves cost only a few cents apiece) runs into a substantial financial outlay, and to enable a few thousand more miles before this is necessary is certainly worth the time and cost of a Dri-Powr treatment.

Several staff members' cars were leaving spots of transmission oil in MOTOR TREND's parking lot so we started treatment on several, including one that was really a heavy leaker. Two pints in each car stopped the leaks in those that were dropping small amounts of oil every few hours, but the badly leaking one left a red pool of oil—red

because of the tell-tale dye incorporated in Dri-Powr to indicate if the leaks are coming from the treated transmission, or some other source.

Permanence of the additive varies from a few thousand miles to as high as 10,000, depending on the condition of the seals. If you plan to keep the car, the manufacturer recommends that you use his product only to stretch more mileage out of your automatic transmission, but eventual seal replacement will be necessary.

The oil base that the manufacturer uses to carry the seal conditioner is his secret, but it disperses immediately into the transmission fluid, carrying the sealer with it. As oil oozes out the seals, the compound cleans it of the hard and brittle varnishes . . . and at the right place, the seal.

Owners of the test-treated cars that had been troubled with jerky shifts and band-slipping reported that shifting was smoother and band-slipping was reduced. Such faults in automatic transmission operation can be and should be corrected by adjustment, and severe slipping or grabbing cannot be successfully cured by adding something to the oil.

For those who travel great distances, and want to insure against losing transmission oil, should a leak develop on the road, one pint of the product is good insurance. The red dye it contains will give a sure indication of the first leak and knowledge that the absolute mileage on the seals has been reached.

An honestly advertised product that works, it is distributed nationally and in Canada through service stations and garages by Dri-Powr distributors and sells for \$1.95 per pint can. If not available in your area, query Dri-Powr Co., 735 N. Georgia, Azusa, Calif.

Overloading eased with Load Lifter Helper Springs

LOAD LIFTER HELPER SPRINGS by Superior Industries are designed to aid rear spring support for extra-heavy passenger, luggage, or trailer loads. They can also be used on pickup trucks for overloads as high as 1500 pounds. These springs do not alter ride or handling with light or medium loads, as they just touch the frame until overloads push it down on the top coil. Rubber tubes around the top coils prevent thumping noises on frame contact.

Made in two models, the No. 75, for loads of 750 to 1000 pounds over normal spring capacity, and No. 150, for overloads to 1500 pounds, each unit comprises an aircraft aluminum casting that conforms to the axle housing and holds the heavy coil spring. A saddle clamp holds the unit tightly in position with two nuts, and a set can be installed in 15 minutes on most cars and light trucks from 1940 to current models.

There are probably more customized and modified pickup trucks in Southern California than any other part of the country. They are used for hauling, drag racing and touring. Most often they are lightly loaded and require some rear spring alteration to keep the tailgate from waving up and down. This poses a problem when heavy hauling becomes necessary.

The test truck, a 1957 Chevrolet, has almost sportscar handling characteristics when empty but being a friendly young man, the owner on occasion has loaded it down with engines, rear axle and



wheel assemblies, and all the other paraphernalia that car builders always seem to lack the transportation to move. The truck bottomed on dips and leaned quite a bit under these loads so some sort of springing aid was indicated. A set of No. 75 Load Lifter Helper Springs were installed on the rear axle of the pickup with the rubber-covered top coil just touching the frame. In this condition they supported nothing but started to compress when a 200-pounder stood on the rear bumper. On the road the truck handles as before, but does not bottom when loaded.

MOTOR TREND has been observing similar installations on passenger cars. The owners were happy with the ride but found that extra passengers or speeds their big engines were capable of produced bottoming on highway dips. Installation of a set of these coils provided that extra help the stock rear springs needed when the full weight suddenly descended on them.

For reduction of body sway on heavier cars, the No. 150 is recommended; these, like the No. 75, do not push up when at rest but the heavier coils do come into play sooner and require less movement before spring resistance against the frame increases. These springs are definitely recommended for overload or sway correction as they can be quickly installed, do not affect ride unless overloading occurs, are extremely well made, and are reasonably priced at \$11.95 for the No. 75, and \$16.95 for the No. 150. Available at most automotive jobbers, wholesalers, and chain stores throughout the United States. A postcard to Superior Industries, Inc., 7260 Atoll Ave., North Hollywood, Calif., will get a prompt answer as to availability.

No-rubbing high gloss wax by Car-Skin improves finish

SOME MONTHS AGO (Feb. '59 MT) we use-tested an automobile paint reconditioner called Car-Skin and waited patiently to try its companion product, Car-Skin Advanced Formula paste wax. We have now had an opportunity to test this new product and must say that it was worth waiting for.

Just to be on the safe side, we used as a test surface the same maroon finish that we had previously restored to brilliance with the conditioner. The hood section had not been cleaned or waxed since the last application of conditioner, but to follow the directions exactly, we went over it again before waxing. Using a 4- by 4-inch pad made from an old bath towel, we spread the wax on the cleaned surface—no rubbing, just smoothed out lightly so it covered. Within seconds the now dull surface was ready to wipe off with another sizable piece of old toweling. Our paint surface now shone with the gleam of what appeared to be a laborious wax job with all of the shine and practically no effort.



Naturally, oxidation and road scum can hinder an effective wax job, and some good cleaner is recommended; but just to see how clean the surface had to be to respond to this no-rubbing wax, we washed a car with water to which we had added a small amount of water softener. After rubbing dry with a chamois, we applied the wax as directed, and a few passes with the polishing cloth produced a high luster.

This time of the year is a messy period for cars, with mud and puddles and all the residue of winter washing into the streets and splashing onto automobile finishes. Ordinary dust and road film that deposits on Car-Skin wax can be removed by wiping off with a treated dust cloth. The heavier dirt washes off the waxed surface with clear water and a little coaxing from a soft cloth. The streaks of an unusually wet and dirty fog encountered one evening wiped off like fine dust, but we had some grease globs probably thrown from a freshly lubricated car that required a little rubbing to remove.

This wax covers well, polishes easily, and gives a good luster that lasts. Available in five-ounce cans for \$2 each from Car-Skin Products, Flemington, N.J., or auto supply houses.

PRODUCTS AWARDED MOTOR TREND'S SEAL OF APPROVAL

(Date is that of issue containing test report.)

Borolyte Battery—Feb. '59

International Tire and Rubber Division,
Ward International, Inc., Los Angeles

Car-Skin—Feb. '59

Car-Skin Products Corp., Flemington, N.J.

"GAF" Colloidal Graphite—Apr. '59

HRL, Inc., Los Angeles

Heath Electronic

Tachometer—Mar. '59

Heath Co., Benton Harbor, Mich.

Hedman Headers—Apr. '59

Hedman Muffler and Mfg. Co.,
Culver City, Calif.

Hellwig Stabilizers—Apr. '59

Hellwig Products Co., Glendale, Calif.

HRL Colloidal Graphite—Feb. '59

HRL, Inc., Los Angeles

Lodge Spark Plugs—Mar. '59

Lodge Spark Plug Co., Los Angeles

Midland-Ross Power Brake—Feb. '59

Midland-Ross Corp., Owosso, Mich.

Mileage Minder—Apr. '59

Pacer Mfg. Co., San Francisco, Calif.

Plastic Steel—Mar. '59

Devcon Corp., Danvers, Mass.

Simichrompoli Metal Polish—Feb. '59

Competition Chemicals, Iowa Falls, Iowa

Traction-Master

Shock Absorbers—Mar. '59

Traction-Master Co., Los Angeles

NOW!

SEAL OF APPROVAL GRANTED
NEW Model 300 MILEAGE MINDER
BY MOTOR TREND MAGAZINE



Here's how Motor Trend's technical staff reports on their *Product Use Tests of Mileage Minder*. (See April, 1959 Motor Trend for full report.)—

"Paser Manufacturing Co. has been making a fuel pressure stabilizer called Mileage Minder. This well-made and trouble-free little device . . . contains a spring-loaded diaphragm, a generous reservoir, a porous bronze filter, and a powerful magnet with a large area . . . The diaphragm soaks up the surging pulses put into it by the (fuel) pump and allows the fuel to come out the other side in a smooth flow, but in the same volume as it came in."

"In the process, all of the fuel must pass through the porous bronze filter and around the large area of the magnet. Iron oxides and microscopic particles that have passed through the fuel pump strainer are trapped in the Mileage Minder bowl, where they can be easily removed."

"... providing smooth fuel flow, with no loss of volume, and doing a good job of filtering out particles missed by fuel pump strainers."

Another Good Reason why...

MILEAGE MINDER

Belongs on Your Car!



You're satisfied, more or less, with your late-model car — but still, you sort of feel it's not always performing the way it should. Millions of car owners agree. What's the answer? Simple. Install a Mileage Minder, the same Mileage Minder that's just been given Motor Trend's Seal of Approval!

New Model 300 Mileage Minder has the exclusive Trouble Trap built right into it. This unique and patented permanent-type magnet has been added at no extra cost to you.

Now, save gasoline by putting an end to flooding and fuel waste. Mileage Minder gives you smooth, economical power, better acceleration, gentler idling. No more gasping, jerky pick-up, quick-stop stalling. Ends annoying gas odors inside car.

Mileage Minder causes no harmful, dangerous reduction of manufacturers' recommended fuel pressures. Fuel flows freely—no valves, checks, floats. And in normal use, its sintered bronze filter is practically self-flushing.

Bring your car to its top-performance level. Get a Mileage Minder now, this week, from your car dealer or automotive supplier. Or use the no-risk coupon below.

Paser Manufacturing Company
537 MT-55 Turk Street, San Francisco 2, California

Please send new Mileage Minder with magnetic Trouble Trap. If not completely satisfied, I'll expect my money to be promptly refunded.

I enclose check _____ money order _____ for \$6.95. (Special coupon offer includes postage.)

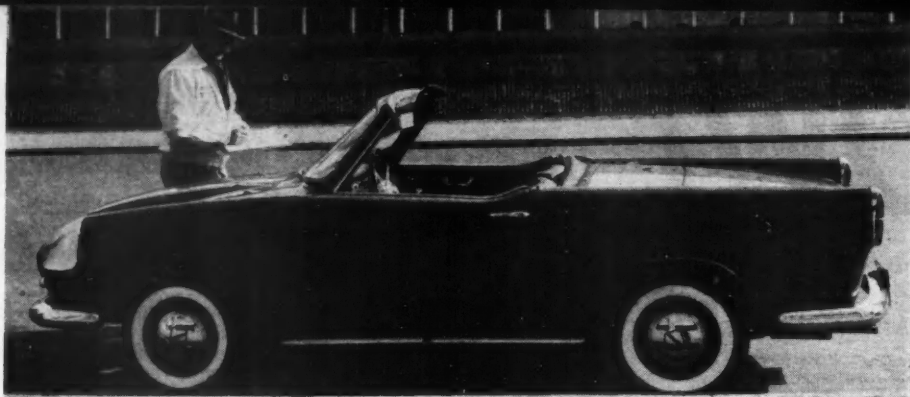
Name _____

Address _____

City _____ Zone _____ State _____

Make, year and engine model of car _____

new
with magnetic
Trouble Trap
\$6.95
price maintained



Sleek appearance should delight lovers of Italian design but headroom is extremely limited with top erected.

MORETTI: FALLS SHORT OF \$2995 VALUE

INTENT ON RECOGNITION in this country, Italy's Moretti Motor Car Factory, at Turin, has this year introduced two additions to its imported line of cars and trucks (see Oct. '58 MT). These are a convertible and a coupe, identical except for top, in a new 750cc Spyder series. A choice of three engines is offered, distributed in the U.S. by the JFR Company, North Attleboro, Mass., with sub-distributors in Florida and Cleveland.

The two cars placed at our disposal for driving impressions were powered by the four-cylinder in-line, overhead-valve and -cam engine which develops 43 bhp at 4800 rpm, a boost of eight horsepower over earlier models. The slightly hotter engine uses one Solex two-throat carburetor, and has a compression ratio of 8.5 to 1, as compared to the earlier 7.5 to 1. Camshaft is specially ground, and the Spyder's transmission contains re-worked first and second gears. A racing clutch completes the modification.

In spite of these "improvements," the car falls far short of justifying its \$2995 price tag. Compared to similar-size Italian automobiles, as we see it, there is neither the comfort nor the performance needed to cause other manufacturers to rush into conference.

To begin with, the instruments are laid out in a cluster directly in front of the driver, whose view is almost completely blocked by the extending spokes of the steering wheel. Headroom is non-existent for all but the smallest built driver, and stick gear control lever operates sloppily. Workmanship of trim, particularly on the coupe's interior, is poor.

Ride is extremely choppy, even for an 84-inch-wheelbase auto, and brakes, while adequate, could be improved by adding to the present 128-square-inch surface. Since our driving policy and habits call for constant 360-degree watchful attention in both city streets and country road conditions, we were chagrined to note the absence of a side view

mirror and that the interior mirror reflected not quite half of the rear window.

In its favor, the car can be parked in a minimum of street space, and it has all the appearance to delight those who appreciate the influence of Italian styling. It is, however, a far cry from the Moretti of the early '50s, which the late Ernie McAfee drove to outstanding wins in California against larger displacement machinery. Today the manufacturer claims that the engine can exceed 60,000 miles without overhaul, and that a Moretti traveled through five continents for 80,000 recorded miles with a sealed engine in 1955.

Optional engines today include a double-overhead cam, single Solex or Weber two-throat carburetor which raise output to 55 bhp at 6500 rpm; two Weber two-throat carburetors and five main bearings, which raise the output to 75 bhp at 8000. Marelli ignitions are used on all models, with panel instrumentation by Jaeger. —Steve DeCosta



Moretti has ride considered too choppy for American tastes with brakes that could stand some improvement. Engine reliability is a strong point—claimed is 60,000 miles without a major overhaul.



Paired-in headlights create sleek front end styling but single bumpers and vulnerable grille appear fragile for daily use in traffic. Engine develops 43 hp, optional twin-cam engines produce 55 and 75 hp.

WANT TO SAVE MONEY OPERATING YOUR CAR?

**1,000,000 USERS
TO SAVE \$20-\$40-**

**SHOW YOU HOW
\$60 PER YEAR WITH**



**MAGNA-POWER
CRANKCASE DRAIN PLUG**

- SLASHES OIL COSTS
- ADDS MONTHS TO
SPARK PLUG LIFE
- KEEPS ENGINE YOUNG AND
POWERFUL AS FAR AS 100,000 MILES

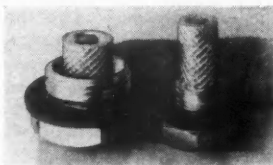
WORLD'S BEST SELLER!

If you want to save money in operating your car, you can start today by installing a Magna-Power plug in place of the crankcase drain plug with which your car was originally equipped.

Magna-Power saves you money because *it slows down engine wear*. Unbelievable? And yet it's true! Over one million users have proved it true beyond any doubt, and so can you.

Magna-Power saves money for car owners in several important ways besides the slowing down of engine wear. (Which has done away with the normally inevitable need for new rings, valve jobs and overhauls for thousands and thousands of Magna-Power users.) In addition, your use of Magna-Power in your car *must* add months to spark plug life . . . it *must* keep oil usage to the lowest figure you have ever known . . . it *must* work to keep your engine operating smoothly, powerfully, and economically for longer than you could ever have believed . . . or your money will be refunded at any time you ask.

(NOTE: This unconditional and no-time-limit guarantee has been in force since the first Magna-Power plug was sold, ten years ago. Yet in all that time, less than 2 in every 1,000 Magna-Power users have ever asked for the refund which was promptly forthcoming.)



How much money will Magna-Power save you in operating your car? That amount will vary with each owner, depending on the economy your car is now giving you and the number of miles you drive in a year. If Magna-Power's use will double your spark plug life and keep your oil usage at present levels, or lower; then you alone can figure just how much that savings is worth to you on the basis of your average annual mileage. If Magna-Power's use will enable you to drive your car 50,000 to 70,000 miles with no other maintenance work than resetting points and cleaning and gapping spark plugs, you alone can determine how much you will be saving in terms of your past experience with engine wear.

One thing you can be sure of. Magna-Power will save you money, as it has for over one million car owners today, or your use of our product will have been at *our* risk, rather than yours. (And, frankly, we're not worrying over that possibility.)

To those of you who are technically-minded,

or who still remember some of your high-school chemistry, we extend a cordial invitation to "plow through" the more technical words that follow. They are our explanation of the reasons why, improbable as it may seem, a simple substitution of crankcase drain plugs can bring you operating economy for your car beyond anything in your previous experience . . . plus your added pleasure in owning and driving a car whose operating condition will leave your more skeptical neighbor in open-mouthed envy. (We know, because we've seen it happen.) To those of you who are willing to take our word—and our guarantee—at this point, we extend an even more cordial invitation to fill in your name, address and car information on the coupon at the end of this advertisement, to send it to us with your remittance and to receive, in return, a Magna-Power plug for your car that is guaranteed to deliver you every last benefit promised above—and a lot of satisfaction, besides!

How Magna-Power Works To Reduce Engine Wear

Magna-Power is nothing more than a crankcase drain plug with one all-important addition—an attached bar of a unique* magnesium alloy which, when the Magna-Power plug is in place, is constantly washed by the

engine oil of your car's crankcase.

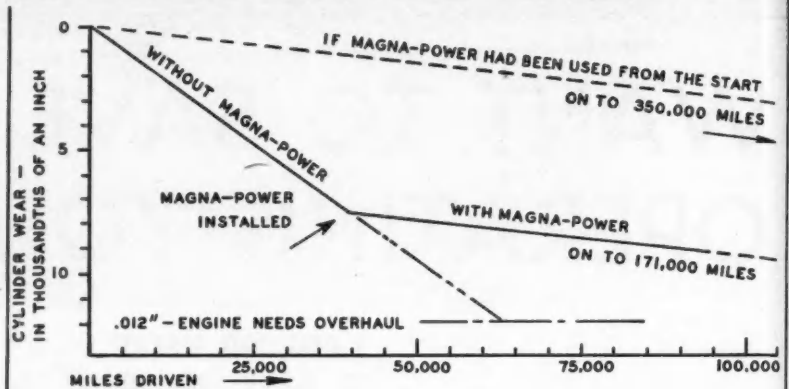
This bar of magnesium alloy is there for just one purpose. It attracts and invites the attack of metal-eating, sulphurous acids that are contained in all crankcase oil, and which otherwise would be free to invade and eat away metal surfaces in every critical area of your car's engine. It does this job superbly and efficiently because of the great attraction that magnesium has for such acids, as compared to other metals used in your car's engine. It isn't sufficient to use just any bar of magnesium, however. Otherwise, cars with magnesium oil pans would be benefited. It must be a scientifically balanced, chemically active magnesium alloy and it must be positioned at the drain plug area of the oil circulating system, where corrosive acids have their heaviest concentration. It leaves your engine untouched by factors that will ordinarily make your neighbor's car old in a year or two, while your car will continue to deliver power performance and economy beyond anything in your previous experience.

Simple idea? Yes, it is, like most of the barrier breaking ideas that really work! Today, almost all oil chemists and lubricating engineers are agreed that acid—not friction—is the top cause of engine wear. You see their beliefs demonstrated in a rash of additives in use by major national oil products. They're good additives, too. But like all other additives, they last just so long—and "so long" often means from just 300 to 400 miles for a top-quality oil that contains additives! Even if you change your engine oil every 2,000 miles (do you?) it means that crankcase acids are freely attacking your car's engine for at least $\frac{3}{4}$ of that time. Only your use of Magna-Power can retard acid corrosion in your car's engine for every mile you drive!

Will Magna-Power Wear Out?

Yes—eventually. After 75,000 to 100,000 miles, most owners who keep their cars that long have found it necessary to replace the Magna-Power plug. Until then, you can get optimum results from your Magna-Power by wire-brushing it (a "seconds-quick" job) whenever you call for an oil change. This removes the chemical deposits slowly built up by acid-attack on the magnesium alloy bar, and it leaves the entire surface area of the alloy free to work most effectively.

*Pat. Pending



WHAT DOES ENGINE WEAR COST YOU?

How would you like to be jolted by the cost of a rebuilt engine right now? This could run you \$200.00 or \$300.00 or even more. Not a pleasant thought but a distinct possibility.

Now you can save this money. Instead of having to plunk that cash down for this needless work, you can use it for that trip you've wanted to take or to help with those heavy school expenses. Let's see what happened to Tony DeBiase's Plymouth.

Tony lives right near here, in Dunellen, N. J. When his Plymouth already had over 38,200 miles on it, he put a Magna-Power in the crankcase. Three years later at over 68,200 miles the cylinder head gasket started to leak. When the head was removed, he found that the water had not caused any damage. Tony then had the cylinders measured by a qualified mechanic, a new head gasket put in and the engine buttoned up. It ran like a clock for another 20,000 miles. Then after some speeds of 80 and 85 miles per hour on a turnpike a piston ring broke. This time everyone was amazed. The engine

was almost completely clean—no sludge, no deposits. It was also almost the same size as before. The wear in 19,800 miles was about two-thirds of a thousandth of an inch. From these two wear measurements it was simple arithmetic to figure the rate of wear with the Magna-Power and then to figure what it had been before Magna-Power was put in. The best way to visualize this is make it into a diagram as shown above.

Saves Owner Over \$200—So Far

The Chart shows how Magna-Power at the lowest point in the engine, checks wear. This engine is STILL delivering top performance. It has now run off the scale at the right—it has over 105,000 miles. At the original wear rate it would have needed a complete rebuild at about 63,000 miles—normal for short trip driving. It has already saved Mr. DeBiase over \$200—in repair bills and is well on the way to repeating the same savings.

Lab Tests— What Do They Show?

Many of the older standard laboratory testing methods show no difference in neutralization number of oil with or without Magna-Power. Neutralization number is a technical term that measures the overall "acid" condition of the oil—including both strong acids and the harmless, "fatty" oils, which also have an acid effect on the testing chemical but not on the metal of the engine. This can be misleading. Ordinary bacon fat for example, will give a very high "neut" number, but it could not be considered as very corrosive.

However the difference is very clear with the newer oil testing methods which separate the "neutralization number" into strong, damaging, corrosive acids in one group and non-corrosive "fatty acids" (or "fatty oils") in the other. Reliable testing shows that Magna-Power reduces the corrosive group of acids by 60 to 70%. As a further benefit, it helps prevent the "fatty oils" from combining chemically to make engine varnish and sludge.

We have prepared a technical report on a new "fast aging" testing method and how it simulates field experience in the laboratory. We will be glad to send it to you. Ask for Report M-4.

JOHNS MFG. CO., Dept. M-5, Middlesex, N. J.

What About Those Who Do Not Agree?

Certain people claim to have run laboratory and road tests that seem to indicate that Magna-Power has doubtful value. These reports may have been made in all sincerity, but it should be pointed out that fast aging and laboratory engine tests such as reported in ROAD AND TRACK and other sources are meaningless unless they are definitely correlated to actual engine experience by extensive road tests.

This has been proven by the sad experiences of many of the leading oil companies. For instance, researchers at the Esso Standard Oil Co. of New Jersey, found by laboratory and engine testing that oil A was superior to either oils B or C. But when the oils were put into actual use in an experimental fleet, oil C which had shown up rather poorly in the laboratory, proved far superior to either of the others.

If the fast aging oven tests and the laboratory engine tests reported by ROAD AND TRACK, had been conducted using the well known conditions found in actual practice, and if the "neutralization numbers" had been reported separately as mineral acids and "fatty oils," an entirely different picture would have been presented.

We don't need to point out that this applies also to the "road test" reported where the testing built up the record with a colossal 1,500 miles—and then reporting only "neutralization number"! Surely this meager pittance cannot be successfully compared with the millions of test car and truck miles that have been accumulated under carefully supervised and controlled conditions. For example, a large and well known bakery products company is currently split-testing Magna-Power by operating some engines without Magna-Power and a corresponding number of engines with Magna-Power. There are 22 engines used. At this time, it has been going for 18 months, in engines ranging from new or just rebuilt to those that were within a few thousand miles of needing overhaul. Many of the engines without Magna-Power have already worn so badly that they have had to be rebuilt. Already the Magna-Power has shown a 50% increase in engine life—and most of the engines with Magna-Power are still going strong! This test is corroborating the famous split test made by the Farmers and Consumers Dairy Co., where wear without Magna-Power was over four times as much as in engines with Magna-Power. This is the kind of testing that makes or breaks a product. This is the kind of testing you can have faith in, believe in.

Independent laboratory testing has shown that the Magna-Power reduced the strong, corrosive mineral acid of used engine oil by three to one or more. We will be glad to

send you a copy of this report. Just ask for Report (IL) 1756.

—And Those Who Do!

Rancher Holley Anderson of Twodot, Montana has had remarkably good service from his equipment. Here is what Mr. Anderson has to say, "I have used your drain plugs for years in all my equipment, which consists of five John Deere Tractors, two Chevrolet trucks, two Oldsmobile cars, and one John Deere Cat. One Olds, a 1939, has 245,000 miles on it. (Magna-Power was installed at about 100,000.) It has had one ring job and now after using Magna-Power it is using less oil at 1700 miles to the quart than it did at 20,000 miles. The 1941 John Deere H tractor stopped using oil after I started using Magna-Power, and the oil filter came out clean instead of a mass of goo. I would not consider using any engine without a Magna-Power. You may use this letter if you wish."

Thanks, Mr. Anderson! Magna-Power has saved this man hundreds and possibly even thousands of dollars. It can do the same for you.

Here's another one from John Doremus of Passaic, N.J. He says, "I installed a Magna-Power in my 1952 Ford six years ago. My gas mileage increased immediately. I was getting 13 miles on a gallon of high test. After Magna-Power, I got 19 miles per gallon on ordinary gas. The motor still purrs like a kitten, and even today after 61,000 miles it still uses only one quart to a thousand miles of driving." This is a great rec-

ord. Mr. Doremus has saved himself and future owners of the car, if he sells it, hundreds of dollars in repairs.

Direct Benefits Of Magna-Power

The direct benefits Magna-Power can give your car engine are these: It reduces wear on vital moving parts up to 80%; it increases engine power by eliminating sludge and resin formations; it slows the deposit build-up on spark plugs—promotes far longer plug life; it allows you to use your oil efficiently for over 3,000 miles before a change is necessary.

Unlimited Guarantee

We are so confident of our products that we are offering them to car owners on a money-back guarantee that has no strings attached, no conditions, no time limit! If our products don't do well for you, if you are not enthusiastically for them, send them back! Any time—years from now if you like! (But satisfaction is so great that our returns are but a small fraction of one percent!)

Our products are available for most U.S. and imported cars, trucks and buses; marine, outboard, lawn mower and many other engines.

Canadian orders filled from Toronto—no duty, no red tape . . . send Canadian check, cash or money order to Magna-Power Sales Co., 190 Brookside Ave., Toronto 9, Ont.

The Original Tested and Proved
Magna-Power®

Pat. appl. for

Dept. M-5, Middlesex, N.J.

(Use Margin If Needed)

Johns Mfg. Co. Dept. M-5
Middlesex, N. J.

My car is a _____ (model) _____ (year)	
<input type="checkbox"/> Magna-Power engine drain plug	\$4.95
<input type="checkbox"/> Magna-Plug transmission inspection plug.	\$2.95
<input type="checkbox"/> Magna-Plug differential inspection plug.	\$2.95
<input type="checkbox"/> Dipstick Magna-Power for my engine.	\$4.95
<input type="checkbox"/> Dipstick Magna-Power for my automatic transmission.	\$4.95

I understand that these products are sold on a no time limit guarantee of satisfaction or my money back. If I'm not satisfied, I'll return the parts for an immediate and full refund! (Save \$1 each on 2nd 3rd, etc.)

☐ Check, cash or money order enclosed \$_____
We pay the postage!
☐ Send C.O.D. Enclose \$1 deposit to assure delivery.
You pay postage and C.O.D. fee to postman.

Name _____

Address _____

City, Zone & State _____

A Princeton, Ill., Chevrolet owner writes enthusiastically, "In 1954 I put one of the Magna-Power plugs in my new Chevy six. I now have 74,046 miles on it and it runs as good as new, with the same original spark plugs in it; the valves have never even been ground. It uses about a quart of oil in 1200 to 1400 miles depending on speed; of course, I use detergent oil. It still makes 19 miles to the gallon of gasoline and it is a power glide. Something has made this car run more miles than any I have ever owned before. Thanks for the information."

Are You Being BRAINWASHED by Your Car?

Here is a comparison that is closer
to the truth than you may think . . .

by Rodger Darling

IN A TINY SWELTERING CELL, befuddled by the glare of blinding lights, the exhausted prisoner sits hunched, hands clutching the rickety table before him. Iron doors clang, punctuated by the staccato machine-gun roar of the firing squad. A burly brute in uniform shouts questions at the flinching prisoner and smashes on the shaky table with a ham-like fist. A large clock ticks ominously and the foul air grows heavy with fear. Rivulets of sweat run down the prisoner's haggard face . . .

Ten thousand miles this side of the Iron Curtain this brainwashing scene is re-enacted a million times a day, on Main Street, U.S.A.

Instead of in a cell, the victim—YOU—sit hunched in your car, tensely clutching the wheel. Noises jar your ears and jangle your nerves—brake screeches, hair-raising honks, nagging rattles and squeaks from your own car, shrill police whistles, and maybe even the outraged shriek of fenders clashing in the traffic churning about you. It's either oppressively hot or drafts chill your feet and neck, while your eyes and nose sting as exhaust fumes creep through the car. Sun glare or high beams blind you.

Brainwashing torture is simply intensified *fatigue*, the same fatigue with which you and all motoring Americans are assaulted daily. Just as torture breaks the spirit, needless highway fatigue mounts into tension, anger, confusion, drowsiness, and frustration that robs you of your driving fun and sets the stage for an accident.

TO SAVE YOU FROM BEING BRAINWASHED by your automobile, MOTOR TREND shows you how psychological torture works, and how to avoid it. The broken victims of the Red Inquisition reveal that physical violence is seldom used, yet strong men crack under the strain. All report that the brainwashing that made them go to pieces is based on a few simple elements.

Sovietized science has exploited the fact that you can waste 75 per cent of your energy "locking out" annoying noises. Psychologists show that you suffer *fear reaction* (high blood pressure, butterflies in your stomach, pounding heart, dry throat, sweaty hands, etc.) from 45-decibel noises—and *this is the level of sound made by an ordinary automobile!*

Car makers know this, and have made great progress in bringing you a car free from noise and nerve-strain. Tire treads that can't be silenced are blended into a harmonious hum . . . fan blades are acoustically positioned to prevent "propeller roar" . . . and much of the plumbing in your car's engine is to keep valves and other rapidly moving parts from clicking and chattering. But all these hush-hush efforts can soon be drowned out by a cacophony of squeaks, squeals, rattles, knocks, grinds, and thumps if you don't do *your* part.

BEGIN BY CHECKING the glove compartment and trunk to make sure loose junk isn't rattling around. Discard unnecessary clutter and securely stow important items such as flashlight, tire-changing tools, etc. Under the dash, dangling wires and loose metal parts can be taped in place. A quick walk-around car check—wiggling the license plates, grille, bumper guards, chrome trim, wheel covers, etc.—may reveal the source of mysterious rattles. A little detective work can



ferret out irritating hood, door, and window squeaks . . . solved by tightening and proper lubricant. Brake fluid applied to the metal-ornamented parts of a steering wheel, wiping the excess off, will remove nagging little chirps.

More pressure in tires (and *less* pressure on the gas pedal!) will cut tire squeal on curves. Undercoating reduces road rumble and engine sounds. Try positioning the windows and ventilator wing differently to diminish annoying wind roar.

Regular lube jobs will prevent noises that signify wear on your wallet as well as on your nerves. While your car is on the lift, search the under-body for broken parts and loose cables that will rattle on bumps; and look for signs of that loud (and deadly) noise-maker, the leaky muffler or loose exhaust pipe.

When you first sink deep into the soft luxury of your new, new car, discomfort seems banished forever. But on a long run you may find the seating *too* soft, leading to charley-horses and cricks in the back. Varying the seat adjustment every 50 miles or so will prove helpful. If you begin to feel too cramped, pull off the road and walk around the car once or twice. Or, if you haven't time to stop, do setting-up exercises as you drive—stretching, hunching your shoulders, arching your back, alternately clenching and relaxing arm and leg muscles, and rotating your head and neck (keep your eye on the road, please!).

Keeping your car's suspension in good shape through regular check-ups and grease jobs, and keeping your tires at proper pressure and alignment, will save your car and you from being "all shook up."

You can test your car's shock absorbers by standing on the bumper (both front and rear) and jouncing up and down. If the car keeps bouncing two or three times after you jump off, it indicates weary shocks that need refilling or replacement.

A RUMANIAN PSYCHIATRIST dreamed up a "bewitched chamber" with whirling, flashing lights, walls askew, and painted in glaring zig-zags so distorted that victims quickly crack up. This is not much different from the eye-straining glare and poor visibility you often encounter at the wheel.

Keep that windshield clean. Dusty and streaky glass dazzles your vision with a million tiny reflections of oncoming headlights or setting sun, blinding you just long enough to kill or be killed.

Are your windshield wipers in perfect condition, blade rubber "alive" and not saw-toothed? Do you have a clean cloth or tissues to keep all windows clean and fog-free, inside and out? Of course you always courteously dip your high-beams to approaching cars (or when driving behind another). If some so-and-so is too ignorant



to do the same, keep your eyes turned slightly toward the curb to retain your vision, and resist the urge to pour *your* high beams at him. You may blind him sufficiently to crash into you.

Too many death-dealing objects demand your instant vision to have it handicapped by needless window stickers and dangling luck (?) charms. Did you know that a 2½-inch sticker, improperly placed, can hide a 2½-ton truck from your view until it is so close that even at 25 mph you can't stop in time? And that dangling windshield gimcrack, swaying rhythmically near your eyes, can induce a strong hypnotic effect.

IN GENERAL, cars should not be driven with all windows tightly shut, even in cold weather. An exterior vacuum is built up by speed that sucks air *out* of the car through window and door seams. This is replaced by air sucked *in* through floor and firewall seams, heavily freighted with vapors and monoxide from the engine and underbody. On the other hand, driving with a window or ventilator ajar and the heater air intake slightly open will force fresh air *through* the heater where it will be warmed and healthfully circulated. The pressure inside the car will then be slightly higher than outside, pushing stale air out and giving exhaust fumes no chance to sneak in. However, if stopped for a long time in winter traffic, keep the heater air intake closed, for in many cars it is located low and may draw in the exhaust of the car stopped immediately ahead.

Keeping the cooling system well filled makes the heater heat hotter, as will a piece of cardboard tied in front of the bottom third of the radiator during winter-time. Installing a high-temperature thermostat (doesn't open until 180°—use only with permanent-type antifreeze) will likewise keep needed engine heat flowing *into* your heater instead of *out* the radiator.

MOST CARS' HEATING SYSTEMS make pretty good cooling systems in the summer. Open windows alone may blast you and your riders with torrid, dusty wind. But if the windows are partly closed, with ventilators adjusted and the heater air intake opened wide (heater off, of course), cooling breezes will flow smoothly throughout the entire car.

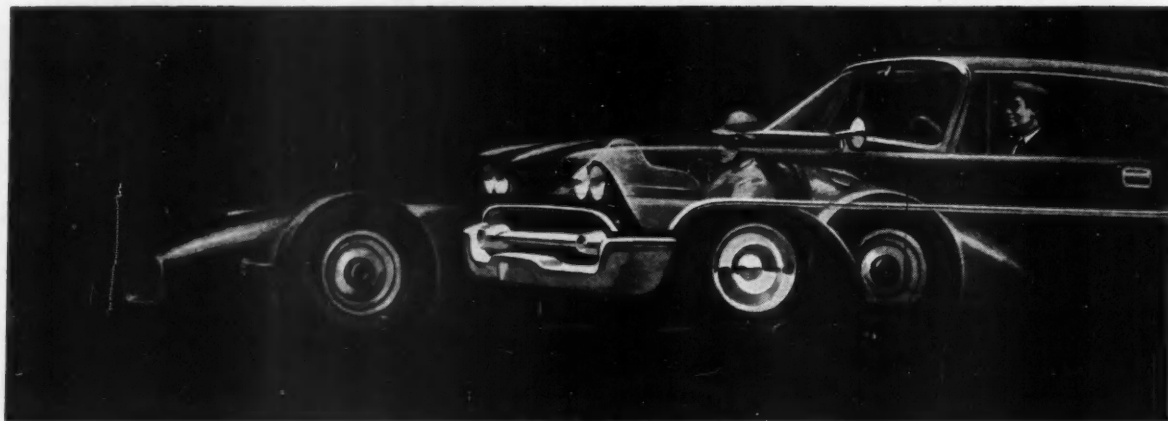
If midsummer heat becomes unbearable, try this. Close the windows almost completely, place a pan of ice cubes on the floor directly under the heater or air vent, and inrushing air passing over the ice will keep your car real cool.

If you enjoy driving as a pleasant, relaxing, and interesting interlude, you are much more certain to arrive at your destination safe, happy and relaxed. Train yourself to this attitude. When you get behind the wheel, relax, and look on drivers and pedestrians with benign kindness. Your car is better cared for than most, and you're a much better than average driver, so you don't have to prove a thing. Be calm and courteous. Take it easy. Enjoy yourself. R-e-l-a-x.



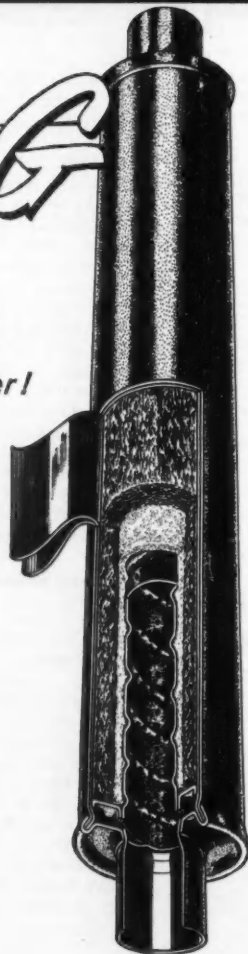
SKETCHES BY CARL KOHLER

*Want to unlock the
reserve power in your car?*



Get a
Super G

*—a totally new kind
of premium-quality
glass-packed muffler!*



New super-power for your car

Newest feature of Super G Mufflers is the *exclusive* Spiral Core design. It creates a swirling action—thrust of faster, quieter exhaust gas flow. Back pressure is at a new low, letting the engine exhaust smoothly and evenly to give you *new power*—new driving economy.

New ultra-quiet power tones

Super G is expertly engineered and glass packed to let out only the soft, deep power tones—no harsh blare or sudden raps with acceleration.

New, longer service life

Inner heads are pressure locked in place—extra-heavy outer heads are spun onto the shell under 30 tons of pressure. The seamless outer shell is double-wrapped, of continuous prime steel. With a Super G, you can count on many more *extra miles* of driving pleasure. Get one today.

**AT YOUR FAVORITE DEALER
OR AUTOMOTIVE STORE**

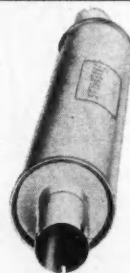
SUPER G MUFFLERS

Dept. 16E, Toledo 1, Ohio—Goerlich's, Inc.

*Dyna-Glas gives you power,
economy and smooth mellow tones
—at a popular low price*

Big 2-in. straight-through tube virtually eliminates back pressure—boosts power and gas mileage, too.

Two layers of Fiberglas packing *plus* double shell construction deliver smooth tone and longer service life. If you like the *sound* of power, get Dyna-Glas.



design engineering

continued from page 33

some, like Volvo, who stand on rugged function and follow a style reminiscent of American vintage of 1937. Volvo's mechanical design allows much styling modernization and we understand a modern sportscar version of this hot little sedan will soon be offered.

While the design trend is pretty well established toward improving what we already have, the dreamers still dream and stimulate the practical men into even greater things. Our previous reference to the great multiplicity of purpose that designers must incorporate makes the dream car of the future such as GM's Firebird III and Simca's Fulgur more of a single-purpose vehicle than a motorcycle. The Fulgur becomes an airfoil section at speed, at which time the front wheels are retracted and the horizontal stabilizers maintain level control like an airplane. It, like the Firebird which has a small gasoline power-accessory-drive engine, is so full of equipment and so delicately balanced that all it can do is carry two persons between two points. There is no luggage space, hardly room for an overnight case, and with the suspension units and airfoil sections, the car could not haul even a small trailer or run very far on that secondary road to your favorite picnic grounds.

Taking today's cars over stretches of country road that have changed little since we drove them as a hot-footed teenager in cars that jolted our teeth loose and made every turn a thrill show, is an enlightening experience. Many of those same culverts, dips and chuckholes are now just imperfections in the highway surface as we wheel along in our '59 model test car. The curves do not seem sharp at all as our bigger, heavier, more powerful car eases through as if the road had been straightened.

Designers have brought us closer to the highway of tomorrow, not in a dream car, not in a car of the future, but in today's car today. However, they cannot design/engineer cars faster than existing highways are able to handle them—safely. As highway system improvements speed up, so can the realization of the designer's approach to "practical dream cars."

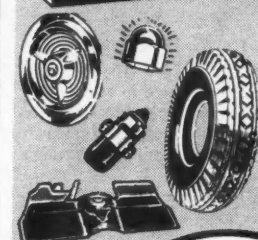
In automotive design/engineering—as in all technological advances—today never really catches up with tomorrow, so the future is actually now. /MT

next month...

Blown 415-hp Chevy

**Testing the
160-mph Bocar**

—plus many other road tests...



J. C. Whitney & Co. 1917 (05) Archer, Chgo. 16

See J. C. Whitney's
Complete Automotive Selection
Before You Buy Anywhere Else!

FREE

324 PAGE—85,000 ITEM AUTOMOTIVE CATALOG

Biggest Book in our History.
Newest 1959 Accessories and
Parts. Buy Direct from
Whitney and Save Money.

Over 85,000 items in stock, including accessories and parts for your car, truck, hot rod, custom car or station wagon, for early models up through 1959. You will find the newest, most wanted Hollywood and Custom equipment not yet in stores — new High Speed parts — as well as hard-to-find replacement parts. Your satisfaction guaranteed on every order or your money back! Rush coupon for your FREE copy of our new 1959 catalog. Please enclose 25c in coin to help pay part of the handling and mailing costs (refunded on first \$5 or more order). Don't delay—send for this value-packed catalog TODAY!

FREE-Mail Coupon Now

J. C. WHITNEY & CO.

1917 (05) Archer Ave., Chicago 16, Ill.

Rush giant 1959 Catalog of Auto Accessories & Parts. I enclose 25c to cover part of mailing & handling cost, refunded on my first \$5.00 or more order. This Offer Good in U.S.A. only.

Name _____

Address _____

City _____ Zone _____ State _____

keep your new motor trend copies sharp!

This heavy quality, handsome leatherette binder keeps your monthly MOTOR TRENDS in top shape.

Makes a handy, attractive reference that lasts a lifetime. Only \$2.25.



MOTOR TREND

8959 Hollywood Blvd., Los Angeles 28, Calif.

Send me MOTOR TREND binder; I enclose \$2.25 in:

☐ check ☐ cash ☐ M.O.

NAME _____

ADDRESS _____

CITY _____

ZONE _____ STATE _____

mail this coupon today! ▶



Why keep pouring money into your car? Because now you can stop wasting money on repairs if you start answering the danger signals.

For instance, a tapping in your engine indicates sticking hydraulic valve lifters and expensive repairs.

Hard starting, rough idling and stalling means wasted gas and oil—sign posts of a costly engine tune up, a carburetor job, or both.

Here's a way you can avoid those repairs without losing a minute's driving time. Have your service station attendant pour a can of Wynn's Carburetor Cleaner into your gas tank. It will clean your carburetor while you drive! Also, pour a can of Wynn's Engine Tune-Up into your crankcase. It will free those sticking valves and lifters and tune your engine while you drive. You'll save time, money . . . and your car!



THE *Proof* IS IN THE *Performance!*

Also available in Canada and everywhere in the free world.

Wynn Oil Co. • 1151 W. 5th St., Azusa, Calif.

72 MOTOR TREND/MAY 1959

coast-to-coast in an austin sprite

by Katherine Griffing

THE REACTION TO the New York license plates on our Sprite in Los Angeles is invariably, "You drove out here in *that*?"

One evening we were sitting in our cozy little apartment in Manhattan, sipping Scotch and sodas, when I casually asked, "Anything new today?"

Equally casual, my guiding light said, "No . . . oh yes, we're moving."

"Where?"

"California."

"When?"

"Friday."

By now I found it difficult to be casual, but I tried. "How?" I asked.

"In Sprito."

Unable to break through the solid wall of complacency surrounding my husband, I closed my eyes and tried to visualize the two of us and our full-grown German shepherd driving to California in our highly-modified, stiffly-suspended, not-so-roomy Austin Sprite. The picture, more like a hallucination, reared up into a little red monster with "Acme Moving and Storage" painted on the side curtains. My easy chair suddenly became a bucket seat, and we were bouncing over bumpy roads with our "40-R" filled shocks. I could stand our little sports car for 10 laps of a two-mile course, but 3200 miles. . .

The following morning (we had three days to pack), my husband, with slide rule in hand, was calculating the size of the trunk in relation to the spring rates. I, meanwhile, was setting out the things we absolutely had to take with us: dishes, TV set, ironing board, blankets, clothes, an old painting of a Ferrari, the anvil Uncle George had given us.

Fortunately, our marriage has always been one of complete harmony and understanding. My husband never argues with me, never denies my slightest wish. He just does exactly as he pleases, and I tag along.

Tagging along with a couple of suitcases, I found him in all his dignity upside down inside the trunk. With the flashlight in his teeth, he muttered something about cocktail shakers and then shouted, "Get me out!"

This was his first attack of morning sickness. These attacks set in every morning as he repacked the things that I made him unload the night before.

An hour later we were on our way. The contents of the Sprite had been reduced somewhat, but I had been able to salvage the bare

essentials. The spare tire and tools were strapped to the luggage rack. (This provided more room in the trunk, but also blocked all rear vision.) The trunk, scientifically crammed to overflowing, held two changes of clothing, nine cans of oil, 10 cans of dog food, three cameras, one electric blanket, a radio and two glass cocktail shakers. In the cockpit, left almost bare by our careful calculations, we actually had enough room for the two of us and the dog—providing she held the rifle, tool box, thermos and my pocketbook.

Whenever possible, we avoided toll roads. We weren't being cheap; it was just so difficult to get the money out of the car to the toll collector. To cut down on draughts, we had sealed the cockpit with masking tape. This made it impossible to open the side curtains and almost as hard to open the doors.

Sprito was full of little surprises. When I took my first turn at driving, I discovered that the extra weight over the rear wheels made the whole length of the Pennsylvania Turnpike a series of right and left turns, even the straights. I was afraid to move the wheel. The first time I got enough courage, the rear of the car leaped around ahead of the front.

Since the Sprite doesn't have a radio, we had brought along our portable so we could at least hear the news at night. This, however, was so well entrenched in the trunk that we never did find it. But, ignorance is bliss. Or so we thought until we reached Indianapolis and discovered that we had blissfully driven right into the worst blizzard in years.

We held a rolling conference. Ahead were 1200 miles of snow, ice and sub-zero temperatures. Behind us was our cozy home, if we could outrun the storm. Before the matter could be brought to a vote, however, our spark plugs quit and we limped to a motel.

Always prepared for an emergency, we pulled out our spare set of plugs—Lodges designed for extremely hard racing. With a little luck these would get us to help.

In the morning we somehow managed to start the engine and plow through a foot of snow to the highway which by now had turned to sheet ice. This was just what we needed. The engine wouldn't run under 3000 rpm, so we had to choose between stalling or skidding. We skidded all the way to Oklahoma City before we found the right size plugs, and by then we were firmly convinced that the Lodges would hold out as long as we could. Besides, warmer weather was ahead.

With renewed hope we once again started out on Route 66. At nightfall we stopped at

continued on page 74



Questions and Answers

What is it—Best Car Buys is a listing service . . . a publication which is sent you every six weeks. It is an organized effort to bring to you from hundreds of sources throughout the United States a list of new and used cars that you may purchase at dealers wholesale or below . . . it is an organized effort to screen from thousands of current wholesale buys the very best ones and present them to you in published form, describing the car . . . the equipment . . . the price . . . the address of the seller and complete instructions for buying wholesale.

But how can I buy wholesale . . . I am not a dealer! True, many of these cars can be bought only through a licensed dealer so we have arranged for a licensed dealer to buy them for you. You will be given a registered number and card which will be submitted each time you wish to make a purchase . . . it's as simple as that.

What type of cars will I be able to buy wholesale? Practically every make and model . . . NEW and USED . . . American and Foreign . . . New cars ordered to your specifications . . . Used cars from the 1950 models through the 1958's . . . sedans, hardtops, wagons, convertibles, trucks, even cars from overseas . . . direct to you.

Where do these cars come from? The giant auto wholesalers who sell large volumes of cars to the used car dealers . . . private company fleets who sell every one or two years . . . distressed new and used car dealers who must reduce inventory . . . car leasing agencies . . . car rental agencies who may sell a car after four months of use but usually after ten to twelve months. Federal, State, County and City agencies who dispose of cars by bid . . . fleet brokers.

What is wrong with these cars . . . they are so cheap! What at first may seem like a gimmick can be explained if you understand the sound business principle behind these prices. First of all, remember these are not retail prices, in fact many are below the average wholesale and are exceptional buys for the car dealer as well as for you. These cars are normally sold only to the car dealer for resale on his lot and if you didn't know how and where to buy direct you might end up buying one of these same cars from his lot and be paying him a profit instead of making one for yourself. The fact that you can buy some of these cars below their actual wholesale value is not because they are wrecked or damaged but because they are usually fleet cars and are sold under a different system than the buying and selling of single units.

As an example let us examine a typical situation where the fleet user is an insurance company who buys 300 cars each year. To begin with they buy from the dealer who gives them the lowest bid . . . these prices are usually \$25.00 to \$50.00 over the dealers wholesale. After the company has purchased these cars they set up a tax depreciation on each car which will allow them to sell this car at the end of one or two years for a very small sum compared to its current market value yet justify this loss or depreciation from a tax standpoint . . . this is the first explanation. When the company is ready to buy another fleet the dealer who sells the new cars is rarely in a financial position or willing to take 300 used cars in trade on a gross profit of \$25.00 a car. Therefore, the insurance company must dispose of their own cars and this is usually done through the giant middleman or fleet broker who will bid and buy the entire fleet. Since his success is dependent on buying and selling as fast as possible . . . so that he can release his working capital for future bids . . . he sells price . . . for he knows that this is the only way he can unload these cars fast enough . . . his outlook on the car market is how much can he make on his investment in how short a time . . . not what the market potential is for a single car. His formula is simple . . . he divides the total number of cars into total price he pays the insurance company and adds a profit suitable for his risk investment and this is the price all 300 cars will be sold for . . . a very democratic action since among these three hundred cars some may be driven 9000 miles while others may be driven 40,000. You see it will be possible for you to benefit tremendously from this system.

BUY YOUR NEXT CAR WHOLESALE

CURRENT BEST CAR BUYS

Year	Make	Full Price
1957	CHEVS....	\$550
1957	FORDS...	\$550
1957	PLYMS...	\$550
1957	DODGES..	\$700
1956	FORDS...	\$250

Approximately 1500 of these are available with standard or automatic transmissions, some have power steering, all 1957 Fords, Chevs, Plymouths are guaranteed not to have bad transmissions, bent chassis, broken windows, major body dents and all are in good running condition. Price is at point of sale. Delivery charge depends on distance, maximum approximately \$75. Cars may be inspected by yourself or an appointed mechanic. Prices taken from a current issue of Best Car Buys at the time this advertisement was prepared.

JOIN NOW

AND BUY WHOLESALE

MEMBERSHIP INCLUDES

1. FULL YEAR'S SUBSCRIPTION TO BEST CAR BUYS (9 issues)
2. WHOLESALE PURCHASING SERVICE AND MEMBERSHIP CARD
3. WHOLESALE PRICING SERVICE (DEALERS WHOLESALE COSTS FOR THE 1959 MODEL CARS)

Our Guarantee

This service must save you at least ten times its cost on the purchase of a car, listed or requested or we will refund you ten times its cost. Dealers excepted.

BEST CAR BUYS
In the Nation



BEST CAR BUYS

MLD 1330 Broadway, Oakland 12, California

1959 Membership \$5.00

NAME _____ AGE _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

Enclosed is my \$5.00 Membership Subscription Fee, dated _____

(16-year-old Thell Reed Jr.)

MONO-FLEX SPRING DIV. Reading 5,
Pennsylvania

VEAS: Nevada Auto, 1401 S. Main

FENTON

HUSH-TONE™

There's only **1** kind
of muffler you need
for every car....

The ONLY MUFFLER Glass Pack with the LIFETIME GUARANTEE

There's no need to buy high
priced factory duplicate
mufflers when Fenton
Hush-Tone the All-
Purpose Muffler
does the job at
the low price
of \$7.95 to
\$9.65 for
most
cars.

Yes, Fenton Hush-Tone Mufflers are best for every car because Fenton has
applied modern engineering principles to produce a muffler that meets the needs
of today's driving, yet gives more horsepower, more mileage and a
pleasant tone of power. Best of all, Fenton Hush-Tone Mufflers actually save
you money by increasing gas mileage and horsepower. Every Fenton Hush-Tone
Muffler carries an UNCONDITIONAL LIFETIME GUARANTEE against burn out,
blow out or rust out... further proof that Fenton Hush-Tone Mufflers
are the best mufflers for every car, including replacement of factory equipment.

THEY'RE
**BRAND
NEW!**

BEAUTY BEYOND COMPARE!

Featuring an air cool fin treatment that is a Fenton
custom deluxe design. Not made of thin flexible
or bendable pipe, but of heavy duty 18 gauge
Chrome Pipe. Scavenges exhaust gases. Reduces
bumper discoloration. Increases horsepower.

FENTON RIPPLE CHROME PIPES

THE LATEST CUSTOM ACCESSORY!

The really smart customizers are
using these newest Fenton Ripple Chrome
Pipes to give that extra touch of
class on real "dress-up" jobs.
See them at your dealer now and be
first with this brand new accessory!

FREE!

GET YOUR COPY

FENTON

"MOTOR MAGIC"

Informative and interesting booklet with driving, racing and safety tips
by Chuck Daigh, Troy Ruttman, Jerry Unser. Write dealer or send
coupon to Fenton.

FENTON CO., 3401 E. Pico, Los Angeles 23, Calif., Dept. MT
Send Motor Magic!

NAME _____
ADDRESS _____
CITY _____ STATE _____

ERS
ALERS

NEW JERSEY
JERSEY: Ace Auto, 22nd & Federal
JERSEY: J. S. Dist., 227 Monroe St.
JERSEY: House of Chrome,
JERSEY: Frank Smith, Hway 10

NEW MEXICO
NEW MEXICO: Ace Auto, 1513 S. 4th
NEW MEXICO: Roswell Mot., 204 N Virginia

NEW YORK
NEW YORK: Jet Auto Supply, 1772 66th
NEW YORK: Sport & Custom, 316 Ramsdell
NEW YORK: Power Speed, 305 North
NEW YORK: Stoney's, 2000 Henrietta
NEW YORK: Muffler Sales, 1205 Erie
NEW YORK: Carl's Auto, 420 Court St

NORTH CAROLINA
NORTH CAROLINA: Ed Joyner, W. 4, Emma Rd.
NORTH CAROLINA: Summer Auto, 300 Front

NORTH DAKOTA
NORTH DAKOTA: Celler's Auto, 120 Main Ave.

OHIO
OHIO: Puthin Auto 5805 Madison
OHIO: United, 12524 26 St. Clair
OHIO: Fuller Auto, 750 W. Broad
OHIO: Brockman, 112 Valley St.
OHIO: Rose Auto, 411 S. 2nd St.
OHIO: Baumann Auto Sup., 3341 Dorr

OKLAHOMA
OKLAHOMA CITY: Champion Auto,
OKLAHOMA CITY: 15143 W. Main St.

OREGON
OREGON: Pacific Auto, 44 W. 10th
OREGON: Walker Auto, 964 Charnell
OREGON: Jap in Cottage Grove, Roseburg
OREGON: Thrift Auto, 408 Riverside
OREGON: Coast Auto, 110 NW Bldg.
OREGON: General Auto, 523 NW 6th
OREGON: Northwest, 907 W Irving

PENNSYLVANIA
PITTSBURGH: Cooper's, 1825 Roth
PITTSBURGH: Chelsea, 26 N. Cameron
PITTSBURGH: H. R. Sales, 1204 W. Girard Av.
PITTSBURGH: Broucher's, 5429 Mifflin
PITTSBURGH: Under 2822 Saw Mill Run
PITTSBURGH: Seward's, 434 N. 6th

TENNESSEE
MEMPHIS: Berlin's, 1610 W. End Ave.

TEXAS
HOUSTON: Baker, NE 8th & Ridgeway
HOUSTON: Custom Car, 713 E. 10th
HOUSTON: House of Seat Covers and
HOUSTON: Muffler Shop,
HOUSTON: 811 1/2 N. Brownlee
HOUSTON: Lindsey Auto, 202 S. 1st
HOUSTON: Mark's, 1600 Greenville Ave.
HOUSTON: Presley Auto, 905 S. Crockett
HOUSTON: Kubby Auto, 2500 Texas St.
HOUSTON: Kruger Auto Sup., 5 Stores
HOUSTON: Murphy Co., 614 W. Garland
HOUSTON: Allied Dist., 2500 Commerce
HOUSTON: Schuman Auto, 5902 Armour
HOUSTON: Thiede, 1518 24 Westheimer
HOUSTON: Warren Auto, 5121 Humble
HOUSTON: Pettigrew Auto, 8121 Jensen
HOUSTON: Tommy's Auto, 514 Bldg.
HOUSTON: S&R Auto, 1710 Avenue F
HOUSTON: Seat Cover Ace, 2706 W W
HOUSTON: Marks, 205 Green
HOUSTON: Reed, 407 Columbia St.
HOUSTON: Atlas Muff., 1718 Bldg.
HOUSTON: Automotive Jobbers,
HOUSTON: 51 San Fernando
HOUSTON: Standard, 2220 Nogalitos
HOUSTON: Nelson Presley 1423 Houston
HOUSTON: Muffler & Custom, 1020 Ervin
HOUSTON: Muffler Center, 1801 Washington

UTAH
UTAH: Hedfield's, Box 458
UTAH: SALT LAKE CITY: Hollywood Muffler,
UTAH: 284 So. State St.

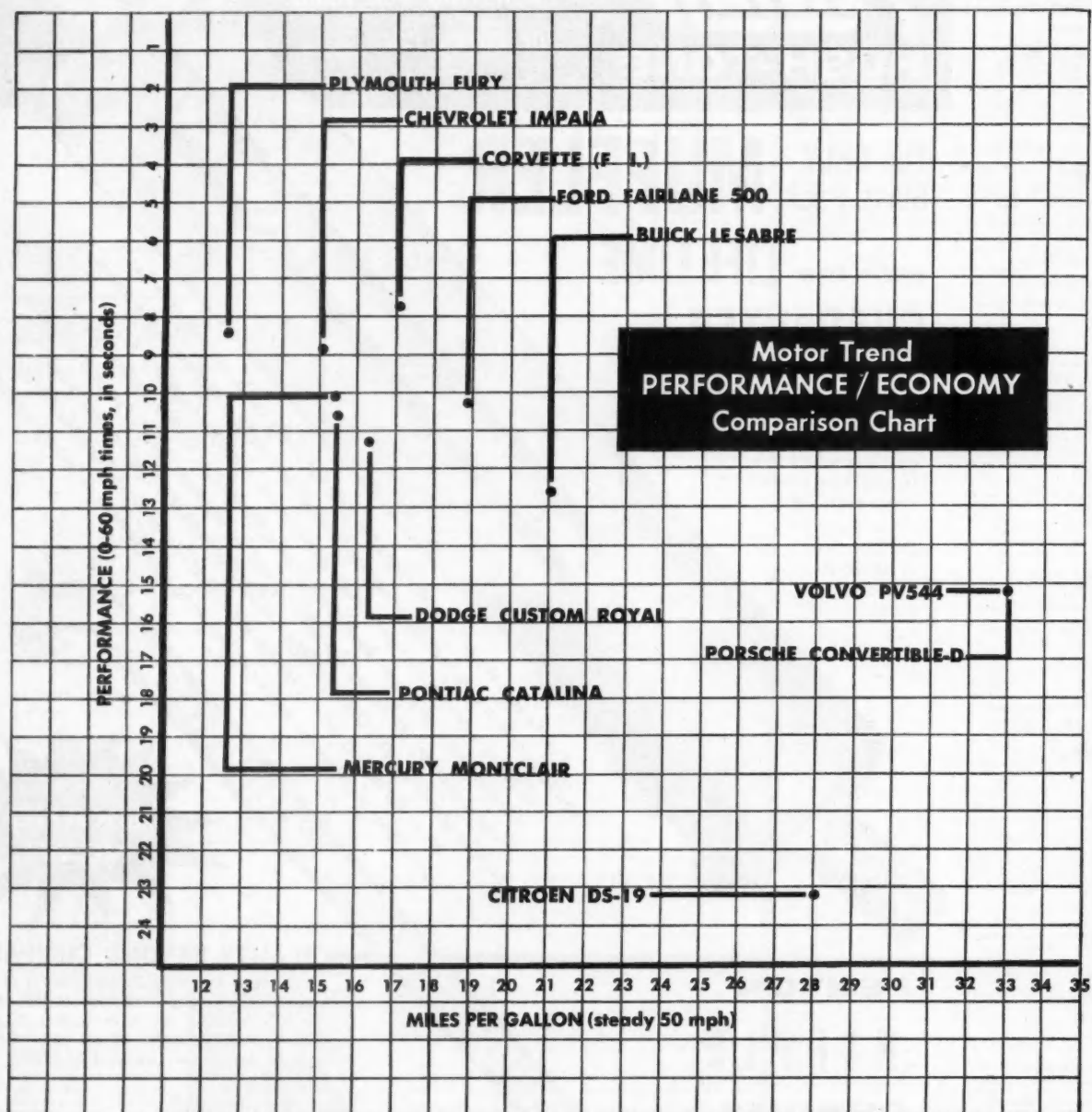
WASHINGTON
BELLINGHAM: Gordon's, 929 State St.
BELLINGHAM: Pacific Enterprises, 405 Allen
BELLINGHAM: Bridge Pump, Box 506
SEATTLE: Auto Access., 1516 N. 11th
SEATTLE: Allen Auto, 9810 14th Av SW
SEATTLE: B. Boy's Auto, 10204 Bothell
SEATTLE: Burien Auto, 15411 Ambaum
SEATTLE: Hallett Electric, 2017 7th Av.
SEATTLE: Northwest Auto, 410 Elliott
SEATTLE: Schuch's 7 stores to serve you.
SPokane: Garland, N 3622 Division
SPokane: Thrifty Auto, N. 2001 Divis.
TACOMA: AA Auto Pks., 2802 Pacific
TACOMA: Bragetta Auto, 1136 Pacific
TACOMA: Penno Auto, 2925 Main
TACOMA: Avenue Auto Parts
TACOMA: Triangle, 1222 S. First St.
TACOMA: Day & Nite Auto, 1004 N. 1st

WASHINGTON, D.C.
Custom Speed Shop, 633 Main, S. W.
H Gear Dist., 1811 Rhode Island, N.E.

WISCONSIN
LA CROSSE: Howard Hopt, 1103 LaCroix

There is a FENTON
DEALER near you.

Check the list shown at left. If your local DEALER is not listed,
write for his name and address to FENTON, Los Angeles 23



EACH MONTH, as Motor Trend road tests cars, we plot acceleration times and fuel consumption on the above chart. In addition, we will enter performance/economy figures for both imported and domestic cars that are being tested or interesting machines that we get a chance to drive

through this portion of our road test program. The higher the point from the bottom line, the faster the 0-60 mph acceleration times. The greater the distance from the left scale, the better the steady 50-mph gas mileage. Previous findings will be retained through the year as new ones are added.

PURE sets 71 new records at Daytona!

PURE Gasolines rewrote the record book again at the 1959 NASCAR International Safety and Performance Trials . . . on the beach and at the new Daytona International Speedway.

Using PURE Gasoline, competing drivers set a total of 71 new performance records.

PURE Gasolines have now set a total of more than 600 official competitive records for power and acceleration, for mileage and economy—more than any other gasoline.

So, if you drive for *performance*, get it. Put PURE-super-PREMIUM in your car!

68.6 miles per gallon

In the special Pure Oil "Gasoline Stretcher" Economy Contest held at Daytona, the winning car got a fantastic 68.6 miles per gallon on PURE Gasoline.

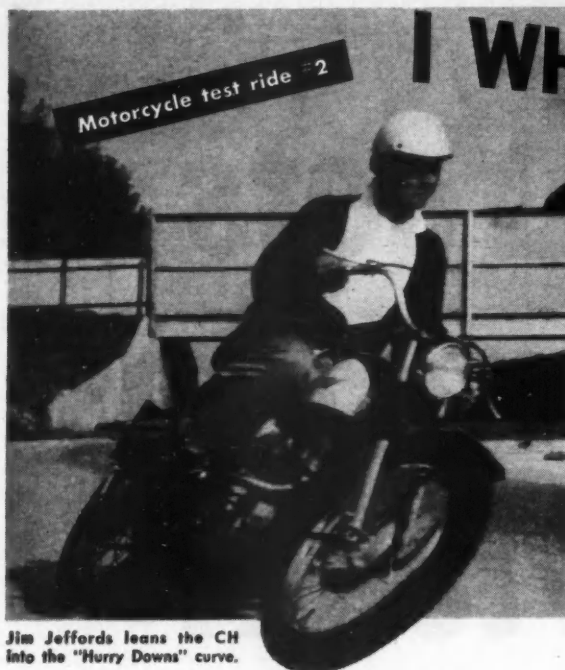
Of course, we can't promise you'll get the same kind of sensational mileage (the drivers used every gas-saving trick known). But the results do prove there's a whale of a lot of economy engineered into every gallon of PURE Gasoline!

Pontiac cars capture Pure Oil Performance Trophy

This Pure Oil Performance Trophy is awarded on the basis of points scored by NASCAR for all-round passenger car performance. Previous winners were Ford in 1956, Chevrolet in '57, and Pontiac in '58.



Before another day goes by... **BE SURE WITH PURE**



Jim Jeffords leans the CH into the "Hurry Downs" curve.

Jim Jeffords, National Class B sports car champion, reports on HARLEY-DAVIDSON Sportster CH



Take-off — "I wheeled up to the starting line, shifted down easily, throttled and took off. An explosive surge of power socked me back in the saddle as I flattened out into the straightaway.

Curves — Swung into the 90° turn at station No. 5, let her out under the bridge and dug into the tricky "Hurry Downs" curve. She hugged the blacktop like a coat of paint.

Steps — I hit the last turn into "RA Straight" and headed for the pit... came in like a homing angel — sweet, sure and steady.

Like Jim Jeffords, you'll experience a new thrill when you ride a Sportster CH. See your nearest Harley-Davidson dealer or use coupon for free colorful folders.

Harley-Davidson

HARLEY-DAVIDSON MOTOR CO., Dept. MT, Milwaukee 1, Wis.

Name..... Age.....

Address.....

Dealerships Available. Write for Information.



For Tony Bettenhausen—champion driver in 1958—only one brake lining brand was good enough at Indianapolis

A few frank words from '58's top racing driver, Tony Bettenhausen: "When you're risking your life at the '500' in the toughest kind of automobile racing, only one brand of brake lining is good enough—the very best. In my book—and this goes for just about all the top drivers—that's Raybestos. We just can't afford to settle for anything less."

Nor can you if you want to be able to stop safely on today's superspeed turnpikes or in jam-packed city traffic. For Raybestos PG Lined Brake Shoes—the product of the finest materials and methods that ceaseless research can develop—give you that *extra* protection you need to drive confidently under even the worst traffic and weather conditions. So don't take chances. Instead, take Tony Bettenhausen's advice. Insist on Raybestos.

RELINE WITH

Raybestos
AMERICA'S BIGGEST SELLING FRICTION MATERIAL

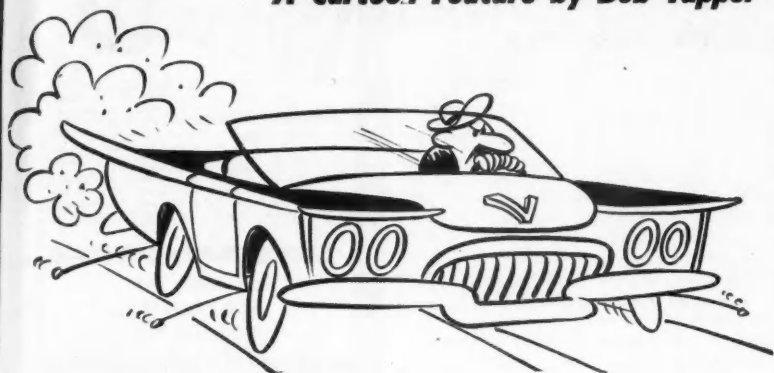


RAYBESTOS DIVISION of Raybestos-Manhattan, Inc., BRIDGEPORT, CONN.

RAYBESTOS-MANHATTAN, INC., Brake Linings • Brake Blocks • Brake Fluid • Clutch Facings • Industrial Rubber • Mechanical Packings • Asbestos Textiles • Engineered Plastics • Sintered Metal Products • Rubber Covered Equipment • Laundry Pads and Covers • Abrasive and Diamond Wheels • Industrial Adhesives • Bowling Balls

THE DETROIT LOOK

A Cartoon Feature by Bob Tupper



THE WIDE LOOK . . . Made special for the man who hates everybody. Comes in just one model — the "Road Hog."



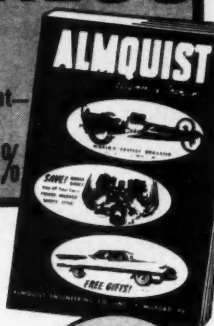
THE LONG LOOK . . . seats approximately 23 large-size humans with ease. Popular with people who own two football teams.



THE BACKWARD LOOK . . . This one we think was designed primarily for picking off pedestrians. It looks exactly the same coming or going. Very successful on one-way streets.

FREE BIG NEW HI-PERFORMANCE CATALOG

World's Largest
Stocks of Speed,
Power, Mileage,
Custom Equipment—
For ALL Cars!
SAVE TO 60%



Order DIRECT from original designers! Save time, money, & freight! ALL-NEW "How-To" CATALOG shows everything for your family car, racer, rod or custom! Includes ALL FAMOUS BRANDS & many new items not in stores! Thousands of LATEST Accessories, Speed & Power Equipment, Racing Parts, "Doll-Up" Items, Gas-Savers, Conversion Kits, etc. for ALL cars. Immediate delivery! Don't buy till you see this FREE catalog. WE GUARANTEE THE BEST FOR LESS!

EXTRA! LATEST "TOP TUNING TIPS"

Tells how to Step Up Your Car's POWER, PEP, MILEAGE! World's Champion, DON GARLITS, reveals his 140 MPH speed secrets. Complete Souping Data for Road and Track.

IT'S FREE! MAIL TODAY!

☐ Rush my FREE Money-Saving Catalog!

NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

ALMQUIST

DEPT. MTC-5

ENGINEERING, MILFORD, PA. DEALERSHIPS AVAILABLE

DID YOU KNOW

that of the 40,000 human beings killed last year in automobile accidents 20,000 would be alive today if they had been wearing safety belts. 5000 lb. IMPACT AUTO SAFETY BELTS available in friction and metal to metal design with 100% Du Pont Nylon webbing—complies with strength specifications of: Calif. State, C.A.A., S.A.E., & GSA (Federal specs.). Available in any color—write for prices & illustrated information.



RAY BROWN AUTOMOTIVE

—mfr. of the original auto safety belt

5656 SANTA MONICA BLVD., L.A. 38, CALIF.



SPORT KING COACH

SLEEPS 6, 8' & 10' cab over models. Front kitchen style. No sway. Fits all pickups. Insulated. Eqt. sink, stove, icebox, dinette, beds, etc.

DEALERS INQUIRE.

Write for FREE brochure and nearest dealer's name.
KING TRAILER CO., INC. 437 East Carson
Torrance 9, Calif.

WEIRDO-SHIRTS

By The Crazy Painters

30-DAY SPECIAL ONLY \$3.95

Crew neck. Includes sweat shirt & painting. Hand painted weird and gory murals done in fluorescent paints. These are fantastic! Any design you want we paint it.

Be sure you state size

Our 6" zipper and collar shirts at \$5.50 ea. Special striping brushes two for \$2.00

California residents add 4% sales tax.

No catalogs available. Order from Dept. MT-5.

THE BARON & ROTH

9001 Atlantic, South Gate, Calif.
LO 6-4365

PAINT IT NOW! GET THE INFRA RED BAKED GLASS LIKE FINISH



Above: Our Infra Red oven assures the hard and durable porcelainize finish.

CUSTOM UPHOLSTERY
For the price of ready-made
as low as \$29.95

CUSTOM AUTO TOPS

Call for free estimates

UNDERCOATING

any car with 3M **\$14.95**
★ SPECIAL To introduce our better painting method bring this ad with you for \$5 allowance on our deluxe paint job.

**INFRA RED
AUTO PAINTING CO.**

our 2 convenient locations

Los Angeles 3412 W. Pico
REpublic 44131

Glendale 6717 San Fernando Rd.
CLtrus 22131

ENGLISH FORD PARTS

- We have the largest stock of parts for English-built Fords in the United States covering all models—Anglia, Prefect, Thames, Consul, Zephyr and Zodiac.
- Orders shipped same day received. Ask for part needed by year and make.
- Write, wire or phone John Fisher, WEbster 3-5911

HOLMES TUTTLE FORD

7122 Beverly Blvd., Los Angeles 36, Calif.

FIBERGLASS SPORTSCAR BODIES
as low as **\$295.00**



COUPES • ROADSTERS • DRAGSTERS
Any wheelbase from 94" to 116".

Send \$1.00 today for illustrated brochure and instruction plans. Your \$1.00 will be applied to purchase price. Write Dept. MT-2.

VICTRESS MFG. CO., INC.

11823 Sherman Way, North Hollywood, Calif.

Look first at **AERO-CRAFT** AD-18 complete \$1199.00

Guaranteed for LIFE



AERO-CRAFT

31 Models from \$149.00 Aluminum & Fiberglass

Write Dept. M-4 for information

GETTING MORE GO —with headers

continued from page 29

pipes divide it into quarters. Thus, a good header system copes with pressure waves in its own ports, and also with the pressure waves in the main pipe.

Do headers work? Last month for a Product Use Test, we installed a header system on a '57 Ford with T-Bird engine and dual mufflers. The writer stood by the dyno.

Before, the engine produced 124 wheel horsepower at 60 mph, and gave 13.1 mpg on the road. After the headers were installed by Bob, the same engine produced 133 wheel horsepower and gave 16.3 mpg.

Percentage-wise, 7.3 per cent more horses were uncorked, the increased efficiency reflected by a 24.5 per cent increase in fuel mileage. From reading last month's installment, we know that you can't have both at the same time. But assuming the owner of the test Ford doesn't change his driving habits, he will now get every fifth mile free.

If you make any other modifications, it is essential that you clean up the exhaust system, too. In fact, if you put headers on first, you may have to make a few adjustments to compensate for the newly-found efficiency.

As soon as you start to pull the exhaust out, chances are that you're going to starve the engine for fuel when you stand on the throttle. The reasons involve carburetion, which we'll talk about next month. For now, enough to say that now you can burn more fuel, but your carburetors aren't set up to deliver it. This may be the case, too, if you install dual exhausts.

DUAL EXHAUST SYSTEM Anyone who has only one muffler on his car is wasting money. There are few things that pay for themselves, but a dual exhaust system is one of them. Here are the results of an experiment conducted a few years back, when engines were smaller, less powerful, exhaust volumes lower, and the problem less critical than it is today.

All tests were conducted on single-tailpipe cars procured new from dealers. They were run, untuned, to the Clayton chassis dynamometer located in Frank McGurk Engineering, and tested. Then, stock single-muffler systems were replaced by dual-exhaust systems installed by Advance. Cars were returned to the dyno and retested. Here are a few figures, all taken at 3500 rpm, normal road cruising range.

A Lincoln V8 with automatic transmission produced 107 hp before and 113 hp after, for a net gain at the wheels of 5.9 per cent.

An Oldsmobile V8 with Hydra-Matic produced 73 hp before, showed 90 hp after, for a net gain of 23.3 per cent.

A DeSoto V8 with automatic transmission gave 80 hp before, produced 88 hp after for a net gain of 10 per cent.

A Chevrolet in-line six with stick shift produced 73 hp before; after installation

continued on page 82

80 MOTOR TREND/MAY 1959

BUY SELL SWAP BUY SELL

SUBSCRIPTION PER YEAR

\$1

AVAILABLE NOW FOR YOU!

CARS & PARTS

Department M-6
P.O. Box 3742
Memphis 14, Tennessee

BUY SELL SWAP BUY SELL

The Mechanic's Best Friend!

Works in seconds!

3 oz. CAN 35c

Loosens Rusted Bolts
nuts... screws... parts

LIQUID WRENCH

The super-penetrating rust solvent that quickly loosens rust and corrosion.

AT HARDWARE STORES, GARAGES, FILLING STATIONS EVERYWHERE

RADIATOR SPECIALTY CO.
Charlotte, N. C.

Also available in Pint, Quart and Gal. cans

NOW!

CANY

PROJECTED NOSE

Fits all late model G.M. cars

TESTED AND APPROVED

MOTOR TREND

MAY 59

LODGE

WORLD'S FINEST SPARK PLUG

For aer and lobster inquiries invited

401 East Washington Blvd., Los Angeles 15, Calif.

BEST "SPORTS CAR"

OF THEM ALL!

A 4-WHEEL DRIVE WITH WARN HUBS!

Get where you're going fast in free-wheeling, easy-steering 2 w.d., take the rough stuff in 4 w.d. when you get there! Use 2 or 4 w.d. automatically with Warn Lock-O-matic, manually with Locking Hubs. Proved by over a billion miles of service, unconditionally guaranteed. At 4 w.d. dealers.

WARN MFG. CO.

Wichitan 80- 6054 P.O. Seattle 88, Wash.

"\$10,784 IN ONE YEAR"

NEW!

SERVICING RADIATORS!

— Sidney Rad. Shop, Sidney, Mont. —

Make good money servicing auto-truck-radiator radiators with new Inland 1-Piece Radiator Shop. Easy to test, clean and repair radiators. Inland, world's largest radiator equip. strains you free. Small down payment starts you. "Pay-for-itself" Purchase Plan. Profitable dept. for garage or service station. Write for facts.

INLAND MFG. CO.

Dept. MT-5
\$1.00 Jan. 59
St. Omaha 2, Neb.

ORDER BY MAIL

HONEST NEW ITEMS

ORDER BY MAIL

4 VOLTS — 12 VOLTS
ABCO DUAL VOLTAGE BATTERY

30 Months Guarantee

At least a Battery that will provide 12 volts for starting from a 6 Volt electrical system without any change in original equipment such as Generator, regulator, lights, ignition, radio, etc., or any wiring.

Will turn your present 6 volt starter as much as four times faster. Easily starts engines with very low compression or with very high compression or with tight overhaul. Overcomes common starting troubles — temporary flooding, worn plugs, weak ignition, worn starter solenoid, worn starter, also eliminates problems of starting engines that are stubborn when hot.

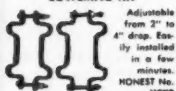
No more cold morning starting problems.

Ingenuous automatic switch operates battery as two 6 Volt batteries in parallel for 6 Volt operation and two 6 Volt batteries in series for 12 Volt operation. Both battery and switch are guaranteed for 30 months.



Available in two sizes:

No. 245 L 10 1/4" W 6 7/8" H 10 5/8" EACH \$37.50
No. 3EE L 19 1/4" W 4 5/8" H 11" EACH \$37.50

58-59 CHEVROLET REAR
LOWERING KIT

Adjustable from 3" to 4" drop. Easily installed in a few minutes.
HONEST No. 1028
Each Kit Complete . . \$4.95
We Pay Postage



CHROME OUTSIDE TAILPIPES

Now in one complete package at a reasonable price — Kit Complete — Nothing Else to Buy — No welding necessary — mount along fender with simple tools — Stop dislocation of rear bumper and paint — A must for station wagons — Packed in Pez.

Complete Kit for Right and Left Side
HONEST No. 78
\$9.95

KOLOR KROME

The most sensational customizing product in years featured in recent issues of Rod and Custom and Custom Cars Magazines — Formulated by George Harris — Mr. Custom Car himself — Transparent Coloring for Chrome — The mirror like reflection of chrome shows through —

4 Dazzling Colors in 16 oz. Spray Can

HONEST'S No.

KK-1 Pagan Gold

KK-2 Candy Apple Red

KK-3 Oriental Blue

KK-4 Parisian Green

16 oz. Can \$1.98

For Chrome — Stainless

Steel — Polished

We pay Postage

WORLD'S GUARANTEED MUFFLER

Our Mufflers carry a guarantee for the life of your car — We mean we replace it if it Burns out or Blows out — just return to us with your original invoice and we will immediately ship you another Honest Glaspecks have that deep Bass tone that gives car a Power sound



HONEST No. 32

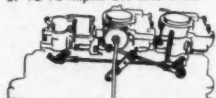
each \$5.95

PAIR \$10.98

MUST KNOW CAR — Year — STD or AUTO trans

HONEST PROGRESSIVE LINKAGE

Ball Bearing selective Progressive linkage—replaces factory Vacuum set up on Chevrolet—Oldsmobile—Pontiac—triple carburetor manifolds. All moving parts are ball bearing. POSITIVE ACTION — NO DELAY IN CUT IN OF SECOND AND THIRD CARBS. UP TO 70 m.p.h. ON ONE CARB



HONEST NO. 86 Each Complete Kit \$11.95

STOP BLANKIN' IT
BLINKING LIGHT WORRIES.

Install an Honest Ammeter and Oil Pressure Assembly to replace the warning lights on your car. Know how much your battery is charging, know how much oil Pressure you have. Complete instructions furnished.

Kit consists of Oil Pressure Gauge, Ammeter Gauge and Chrome mounting Panel.

HONEST NO. Each Kit

HA2K \$6.95

WE PAY POSTAGE

LOWERING BLOCKS

For All Cars

with 2 Leaf Springs on Rear.

Complete with U-Bolts.

Kit to Lower Rear 2"—\$3.95

Kit to Lower Rear 3"—\$4.50

Kit to Lower Rear 4"—\$4.95

State Year and Model Car

You Pay Postage



HONEST No. 51

IMPALA EMBLEM

Self Sticking

For Fender

Skirts

Dash

Trunk

Lid

Each Postpaid \$1.00

HONEST No. 73

FIESTA TYPE CHROME

WHEEL COVERS

14" or 15"

For all Cars — Replaces

original factory type.

3 BAR

SPINNER

Heavy

Construction.

Space for

Weights

Set of 4

\$27.95

HONEST No. 26

Set of 2 \$14.00

HONEST No. 27

NEW CHROME WIRE LOOMS

For All 4 and 8 Cyl. Cars

SIMPLE EASY TO INSTALL

CHOICE OF RED OR WHITE

RUBBER GROMMETS

HONEST NO. Each PAIR

HWLB \$2.95

HONEST UNIVERSAL

MANUAL CHOKE

CONVERSION KIT

To Replace Mal-Functioning

Automatic Chokes

A patented unit, spring loaded, engineered for economical positive manual control with trouble free operation, eliminates stalling and restricted motor vacuum while operating engine.

ONE NUMBER Fits 95% of Applications

Easily installed, no need to remove carburetor. Complete with step by step installation instructions.

TAILORED CAP fits most climatic type units. Special studs & brackets for non-climatic applications.

INSTALL A CW30 CONVERSION KIT TO ELIMINATE HARD STARTING, STALLING, KNOCKING AND POOR MILEAGE CAUSED BY MAL FUNCTIONING CHOKE.

C.W. 30 Each Kit . . \$3.95

WE PAY POSTAGE

BOSCH COILS
IMPORTED FROM GERMANY
GENUINE BOSCH HI-SPEED
SUPER COILS

Larger reserve capacity: Provides stronger sparks, dependable ignition — even under adverse conditions of large spark gaps and low primary mileage.

Waterproof construction: Assured by solid, seamless, one-piece housing, and hermetically sealed, vibration-proof installation of all component parts.

Special insulation: of superior dielectric strength — insures cooler operation, longer life, safer ignition.

TK 6A5 — 6 Volt Ignition

TK 12A10 — 12 Volt Ignition

EACH \$12.75

CHROME LOUVERED

AIR CLEANERS

Gleaming Chrome with Copper-Mesh Cleaning Element



No. 84 Fits Chevy & Pontiac

Rochester Carbs EACH \$3.95

No. 85 Fits Fords, Mercs & All

2 5/8" Necks EACH 3.95

We Pay Postage

LONG JOHN CRUISER

SKIRTS

No Extra Clamps Needed

ONLY \$24.95 PAIR

Delivered to your door or

Nearest Express Office in

USA or Canada only. We

Pay Express Charges.

No. 5—52-54 Fnd Merc Tudor Only

No. 10—55-56 Fnd Merc Tudor Only

No. 20—57-58 Chrys, Dodge, DeSoto

Tudor Only

No. 25—57-58 Plymouth Tudor Only

No. 30—57-58 Ford All Models

No. 35—1958 Chevy 2 Door Only

No. 40—59 Ford

No. 45—59 Chevy 2 Door

No. 57—55-57 Chevy, 55-57 Chrys,

DeSoto, Dodge, Fy., 55-57 Pontiac,

54-57 Olds, Buick Only

49-51 Ford, 49-51 Lincoln, 57

Lincoln, 49-51 Merc., 55-57 Merc.

Tudor Only

SPARK PLUG WIRE



Clear Plastic or Transparent

red clear plastic Spark Plug

Wire. Per foot \$8

We Pay Postage

OHV V-8 Engines need 28 ft.

F. H. Fords need 25 ft.

HONEST KAR KATS
MAN, THEY'RE THE MOST!

Amazing Lifelike Realism!

Completely Assembled Self-

sticking Mounting Bracket,

No Holes to Drill, Esrie Lum-

inous Eyes, Durable, Colors

Will Not Fade — Completely

Washable.

HONEST No. 84 EACH \$2.50

We Pay Postage

SELECT-O-DRIVE

Combination Overdrive Se-

lector and Hill Holder — Easy

to Install — Makes 6 Forward

Speeds out of Your Over-

drive — Allows Clutchless

Shifting, Automatic Hill

Holder.



A MUST FOR ALL CARS

WITH OVERDRIVE

HONEST No. 85

Complete Kit EACH \$4.95

CROSS CHECKED FLAG

4-BAR SPINNER WHEEL

COVERS WITH CHECKED

BACKGROUND

14" - 15" - 16"



HEAVY CONSTRUCTION

SPACE FOR WEIGHTS

HONEST NO. 82

Set of Four \$29.95

Set of Two 15.00

State Size of Wheels

HEY "LEAKY"
EXHAUST MANIFOLD
GASKETS

Exhaust Manifold & Header

Gaskets for 54-57 Fords.

55-58 Chevrolet (Except 348

Cu. In.)



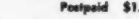
Complete Set—Both Sides

Postpaid \$1.95

Say which Car you want

'em for.

STAR FIRE SPINNER



For All Hub Caps — easily

attached with screws —

HONEST No. 77 Each \$1.95

You Pay Postage

HONEST LAKE PLUGS

FOR ALL CARS AT A

THINKING MAN'S PRICE.



New Low HONEST Price

Triple Chrome Plated

18 Gauge Steel Tubing.

Direct Exhaust Escape with

plates removed boosts power

for competition running.

Packed in pairs, kits are

complete with blocking

plates, gaskets, chrome han-

gars, and air fasteners.

Honest Nos.

HP28 Complete 28" Kit

for both sides 9.95

HP56 Complete 56" Kit

for both sides 21.95

NEW 1959

CATALOG

SEND 25c for NEW 1959

MONEY SAVER CATALOG

BIGGER—BETTER THAN

EVER—MORE PAGES—

EACH CATALOG CONTAINS

\$1.00 FREE CERTIFICATE.

GET NEXT ISSUE FREE.



Enclosed is \$_____ for payment in full (or deposit of

25% if C. O. D.).

NAME _____

MY CAR IS A _____ YEAR _____ MODEL _____ BODY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

Quantity Stock No. _____ Description _____ Price _____

HONEST CHARLEY SPEED SHOP, INC.

Box MT 1904
Chattanooga, Tenn.



But **BARDAHL** is an oil... why put it in the gas?

It's Bardahl Top Oil, ma'am... that lubricates the top part of the cylinders. Regular oil can't get up there. Bardahl Top Oil comes in with the gas. Keeps valves running smooth and quiet. Less gum and carbon. More power. Add Bardahl Top Oil every time you get gas and you'll get better combustion and better mileage. Okay, ma'am?

WORLD'S NO. 1 SELLER / ADD IT TO YOUR GAS



Hitting a new high in books on hobbies!

GUIDEBOOK TO STAMP COLLECTING



The ideal all-around manual for stamp hobbyists. Written in a lively style and packed with off-the-beaten-path information, it offers such intriguing chapters as "The Odd Ones," filled with tales of unique and hard-to-get stamps; "The Stamp Finder," a comprehensive identification guide to stamps of all nations; "Treasure Hunt," dealing with rare stamps worth startling sums. For the beginner, the book includes Stamps in Review, The Language of Stamps, Tools of the Trade, Bargains for Philatelists. Anyone interested in this perennially popular hobby will want this text.

COINS —A COMPLETE GUIDE TO COLLECTING



The fascination of coin collecting has attracted people for some two thousand years, yet never has this hobby been as popular in all nations as it is today. **COINS—A COMPLETE GUIDE TO COLLECTING** is an ideal guide for the numismatist, and provides a full identification of rare and semi-rare coins of the U.S. and foreign countries. Some of the topics include: How to collect and display; how and where to buy and trade; how to make money with coin collections; where to find coins; cataloging. In addition, this informative handbook features over one thousand listings of American coins.

75c at newsstands now—or mail coupon today!

TREND BOOKS 5959 Hollywood Blvd., Los Angeles 28, Calif.

I am enclosing \$_____ @ 85c each (to cover postage, etc.)
Please send me the following books:

- ☐ **GUIDEBOOK TO STAMP COLLECTING—TB 179**
☐ **COINS—A COMPLETE GUIDE TO COLLECTING—TB 180**

(please print)

NAME _____

ADDRESS _____

CITY _____

ZONE _____

STATE _____

82 MOTOR TREND/MAY 1959

GETTING MORE GO —with headers

continued from page 80

produced 78 hp, for a net gain of 6.8 per cent.

A Jaguar XK-120 double-overhead-cam in-line six, running in third gear, produced 97 hp. After installation it produced 103 hp, a net increase of 6.2 per cent.

An MG in-line four was equipped with only one through-type replacement muffler, registered 7.2 per cent net increase.

Installation of dual mufflers on a V8 seems the logical thing to do, since there are two cylinder banks divided by the engine. But it's just as logical to do it to a straight six.

A hole is cut into the stock manifold right by number 5 exhaust port. A joiner pipe is welded to the hole, ready to receive the tail-pipe that feeds to the second muffler. On the inside of the manifold, a plate is welded across to separate exhaust from the first three cylinders from that of the last three. Thus, each pipe of the dual system carries the exhaust from only three cylinders.

Here's the advantage. With a firing order of 1-5-3-6-2-4, it is obvious that the sequence of power strokes alternates through the mufflers. In other words, only every other exhaust slug goes through each of the pipes, giving ample time to dissipate each slug.

There is only one thing to add. It is obvious that a single stock muffler quiet enough for aged Aunt Martha steals a lot of power and wastes a lot of fuel. By installing two mufflers—even stock units—each has to pass only half the volume. All other things equal, each will offer only half the resistance and create only half as much back pressure.

STRAIGHT-THROUGH MUFFLERS But if you don't want to go the dual pipe or header route, or if you want to buy your horsepower a few ponies at a time, start by replacing your stock muffler with a straight-through unit. It's not the ideal way to do it, but you can buy a few percentage points of power increase for a very few dollars. And don't shop price alone.

We've looked at all kinds of mufflers (there'll be a complete rundown in an early issue), and we found that a cheap muffler is only a cheap muffler—while a good muffler is an investment.

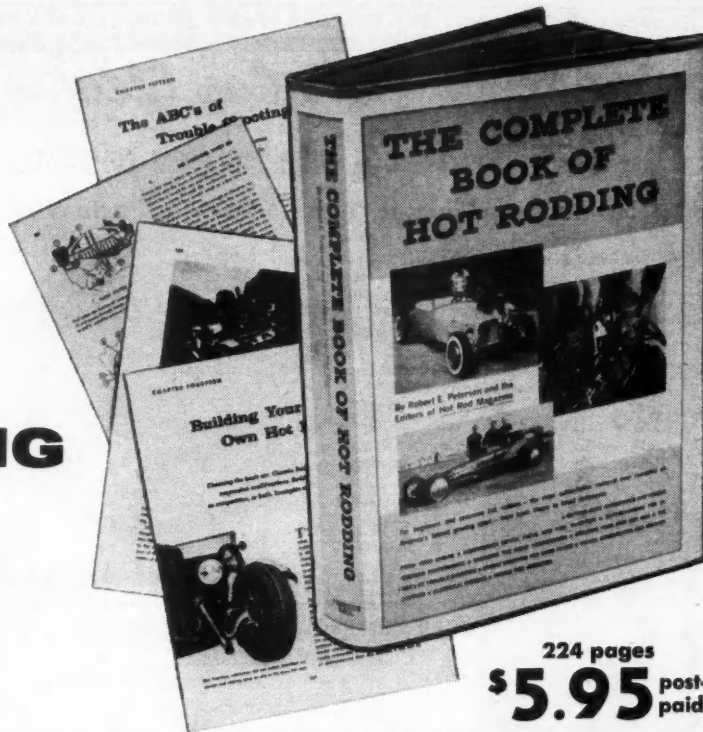
So that's why we talked about exhaust first. Whatever other modifications you give your engine you'll have to clean up the exhaust system, too. In fact, you should do it first. Unless you're rich, you can't afford not to.

Next month we'll talk about the other end—the end where the fuel comes in. We'll get into one-, two- and four-barrel carburetors, combinations thereof, and intake manifolds. Read along with us.

**OVER 200 PAGES OF
THE MOST EXCITING
HOT RODDING MATERIAL
EVER COMPILED IN
ONE VOLUME!**

THE COMPLETE BOOK OF HOT RODDING

"COMPLETE" is truly the word to describe this amazing book. For beginners and seasoned hot rodders, from basic theory to the latest in techniques, **THE COMPLETE BOOK OF HOT RODDING** covers the entire field in detail. Authored by automotive magazine publisher Robert E. Petersen and the editors of **HOT ROD Magazine**, this master reference is certain to provide you with scores of ideas **YOU CAN USE**.



224 pages
\$5.95 post-paid

● **THE HOT ROD STORY**—Learn how the sport of hot rodding actually began. Here is the history of its development, the obstacles which blocked its growth. This informative section also discusses the rise of organized hot rod activities, spearheaded by groups like the National Hot Rod Association. Especially interesting are stories of the early drag racing meets.

● **HOT RODDERS TACKLE THE WORLD'S ENGINES**—How veteran hot rod enthusiasts get more power. Covers such basics as the four-stroke engine cycle, cylinders, pistons, crankshafts, connecting rods, valves, camshafts and other engine fundamentals. The formula for increasing performance is also given and analyzed step-by-step. This chapter provides an invaluable checklist of primary facts.

● **THE TRUE FACTS ABOUT HORSEPOWER**—Torque and horsepower are ratings of the performance ability of engines and, therefore, of relative acceleration and speed capabilities of the cars in which they are installed. The average hot rodder uses the terms torque and horsepower constantly, yet is often unable to define them. In this chapter, you will learn how they're determined, applied to your car.

● **GETTING MORE HORSEPOWER FROM YOUR ENGINE**—Facts about boring and stroking (how to stroke a crank by the welding method, methods of production, stroker pistons and kits), porting—removing material from the walls of the intake and exhaust ports and passages, oversize valves, re-ground camshafts, valve springs (which strongly influence the way an engine runs), carburetion and the exhaust system.

● **YOUR ENGINE'S VALVES**—None of the internal parts in a high-performance engine have an easy job, but it's doubtful if any of them work harder or under more difficult conditions than the valves. Here's how to disassemble, inspect, recondition, adjust. Full information on servicing valves for better breathing by improving the adverse conditions under which they operate.

● **THE COMPLETE STORY OF ENGINE CARBURETION**—How to insure your engine's idling well and running smoothly with good torque output at low engine speeds. Single, dual, triple, quad carburetors.

ors. The problems of progressive linkage. Maintenance and service for better starting, acceleration and economy. Also discusses special fuel pressure tanks, which give non-pulsating fuel flow.

● **YOUR ENGINE'S ELECTRICAL SYSTEM**—High-performance ignition, magnetos, distributors, coils, condensers, spark plugs, batteries, generators, regulators. How to get better performance through ignition conversions. Covers the various functions of the electrical system, with major emphasis on the job performed by the ignition system of firing the mixture in the cylinders at high pressure and RPM.

● **ENGINE BALANCING**—One of the most important steps in any engine rebuilding job is the complete rebalancing of the rotating and reciprocating parts of the engine's crankshaft and rod and piston assemblies. Here's how hot rodders who want top high performance go about putting the rotating parts of their engines in perfect balance. The step-by-step procedures as done by the experts.

● **FACTS ON HIGHER COMPRESSION**—One of an engine's most important features is its compression ratio, which has a definite influence on the torque and power an engine can develop. This section shows you how to get better performance through higher compression ratios. Of particular interest to hot rodders is the authoritative information given on high octane fuels.

● **THE PROS AND CONS OF FUEL INJECTION**—The latest developments in the field of fuel injection systems. Power and economy aspects versus carburetor-type fuel systems. The two basic types of passenger car fuel injection systems under present development—constant-flow and timed injection. Includes the comprehensive report of General Motors engineers on their work on the GM-Rochester fuel injector.

● **SUPERCHARGING FOR INCREASED PERFORMANCE**—Supercharging is a method of hopping-up an engine by providing a mechanical means to force greater quantities of fuel and air mixture into the engine's cylinders than the cylinders can induce normally. This chapter attempts to answer the question, "How much more power can you expect from supercharging?" Also discusses superchargers available.

● **ENGINE SWAPPING FOR MORE POWER**—Savings in time and money can be made by installing a bigger engine. But there are problems, including proper mounting and transmission hook-up. Given here are methods of installation which will help you surmount these difficulties. Swaps include stuffing a '54 Cadillac Eldorado engine into a coupe built from '32-'34 Ford components, also Olds V8s in '49-'53 Fords.

● **CHOOSING THE RIGHT TRANSMISSION**—Discusses transmissions for the various types of cars used by hot rodders: a passenger car used only for normal driving, a passenger car used for normal driving and drag racing, a passenger car used strictly for drag racing, a competition car used strictly for straightaway competition, etc.

● **BUILDING YOUR OWN HOT ROD**—Choosing the basic car. Chassis, body, suspension modifications. Building for street or competition, or both. Examples of some of the best: Lincoln-powered roadster with 1929 Ford Model A body; '32 Ford with '55 Chevy V8 engine; the Glass Slipper, world record-holding Class C (183 to 303 cubic inches) dragster; Mosler Dragliner.

● **THE ABC'S OF TROUBLE SHOOTING**—Every engine malfunction problem is discussed in easy-to-understand detail: ignition system, battery and cables, ignition wiring, ignition distributor shaft, distributor cap and rotor, coil tower, coil lead, ignition distributor primary circuit, breaker points, ignition condenser, primary circuit wiring, distributor "pigtail" lead, distributor primary terminal, etc.

● **RACING TIRE PROBLEMS**—How to figure the proper width and diameter of a racing "slick" in relation to horsepower. How to get the best traction; the most service; the most safety. The five "musts" of bigtime competition: correct tread design; correct outside diameter in relationship to the gear ratio and engine rpm; correct air pressure; correct balance and weight; correct maintenance.

PLUS A THOROUGH ALPHABETICAL INDEX AND SPECIAL GLOSSARY OF ALL THE BASIC TECHNICAL TERMS

CLOTHBOUND • HUNDREDS OF PICTURES • ORDER NOW!

"The material you have in your book of Hot Rodding is the most complete and authentic I have seen. Anyone interested in Hot Rodding should have this book at their side."

—AK MILLER

AK Miller's Garage, Whittier, Calif.

\$5.95

postpaid

**CLIP
AND
MAIL
TODAY!**

PETERSEN PUBLISHING CO. DEPT. MT-2

5959 Hollywood Blvd., Los Angeles 28, Calif.

Enclosed is \$_____, @ \$5.95 each postpaid. Please send me _____ copies of **THE COMPLETE BOOK OF HOT RODDING**.

NAME _____

ADDRESS _____

CITY _____

ZONE _____

STATE _____

Suddenly Your Car Gleams for Spring WITH THIS GREAT COMBINATION! (A No-Rubbing Cleaner + A No-Rubbing Paste Wax!)

Now with these 2 great products you can restore your car to its original showroom brilliance and keep it that way — all without rubbing.

First, clean with the famous Car-Skin Reconditioner — it's safe — it's fast.

Then, apply Car-Skin's sensationally new Paste Wax that gives up to 12 months duration.

Why break your back rubbing? Order both these fine products today. If your dealer cannot supply you write us direct.



**Awarded
Motor Trend Seal of Approval**

CAR-SKIN PRODUCTS CORP., Flemington, N. J.

I enclose check or MO for \$_____. Send me:
_____ 5 oz. Cans Advanced Formula Wax at \$2 ea.
_____ 16 oz. Cans Reconditioner at \$1.45 ea.

Name _____
Address _____
City _____ Zone _____ State _____

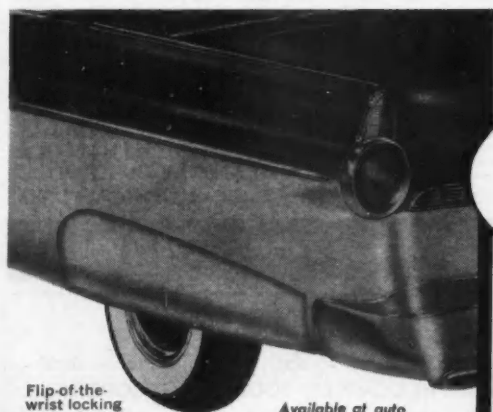


**HOT
ROD** ON SALE NOW!

featuring:

ROAD TESTING THE '59 CORVETTE
MICKEY THOMPSON—World land
speed record challenger
PONTIAC V8 HOP-UP

**New! 'Sports Cruiser' FENDER SKIRT
By FOXCRAFT
AT A LOW
Budget Price!**



Flip-of-the-
wrist locking
action installs
or removes. No
holes to drill.

Available at auto
supply, mail order and
auto chain stores

You've
waited for it!
Skirt almost 4 ft. long ...
custom-fits most older
cars, 4-dr. models,
many '59's

Don't deny your car the
sleek smartness of 'Cruiser'
skirts. Get the new low-
priced 'Sports Cruiser' with
the streamlined flow of
BORCZAK styling, plus per-
fect fit and precision engi-
neering.

STANDARD 'CRUISER' SKIRTS for specific
applications that can take a longer skirt.
Now in 12- and 14-in. depths.

FOXCRAFT PRODUCTS CORP. • Huntingdon Valley, Pa.

SELL 'N' SWAP

Requirements are: copy limit of 25 words (not including name and address); 1st come, 1st served; we reserve the right to edit where necessary; we are not responsible for accuracy of description, although we will reject any misleading statements. This service is not open to commercial advertisers. No ads will be accepted if payment is not made in advance, and such communications will not be acknowledged. Only one CAR may be listed in any single Sell 'N' Swap insertion. This limitation will not apply to parts, catalogs, etc. The charge is \$4 per insertion. If your car is unusual and you have a photo of it suitable for publication, you may submit it with your ad. If we decide to print it there's no cost to you for the cut, but we'll have to decide which photos to use. Sorry, no photos can be returned—Editor

SELL

'48 BUICK Super 4-dr. sed. Light blue, completely orig. thruout, incl. 2 tires. Cond. like new; only 36,000 actual mi. \$500 or best offer. Ronald L. Gaddis, c/o Arnold Harpster, R.R. 1, Sullivan, Ill. '59 STUDEBAKER President 4-dr. sed. with r & h, o.d. Good body & tires; needs paint. Engine good except 1 bearing. Best offer over \$75. J. W. Julian, 2031 S. 8th Ave., Maywood, Ill. CLASSIC & ANTIQUE CAR Sales Catalogs: Packard, Chrysler, Lincoln, Cadillac, Pierce-Arrow, Buick, Orphan & Foreign cars; minimum \$5 each. Also MOTOR (N.Y.) Annual Numbers. Details for large, stamped, addressed envelope. A. E. Twohy, 400 N. Kenmore, Los Angeles 4. TRIPPE SENIOR safety driving lights. World's most powerful, 8 1/2-in. diameter; 6-volt only. Complete with all brackets, fittings, wiring & Gultime wrenches. Brand-new, in orig. boxes. \$35 pr., f.o.b. Philadelphia. A. Ward Shanan, 2444 S. Orkney St., Philadelphia 48, Pa. GARAGE-HOUSE HEATERS using fuel oils. Lifetime use. 1/2-3/4 g.p.h. \$45 f.o.b. Isle of Man. Dollar bills, money orders accepted. "FreeHeat." Kirk Michael, Isle of Man, U. K. '33 PIERCE SILVER ARROW—95% restored. Best genuine offer over \$4000 30 days after appearance



of this ad. 1 of 3 left. Paul Schnabel, 609 Portage Tr. E., Cuyahoga Falls, Ohio.

AUTOMOBILE LITERATURE—old, new & foreign; glossy photos, shop manuals, dealer books; free motor magazines. Write today; get on free mailing list. Nonprofit organization. Auto Maniacs of America, Inc., Stockbridge, Mich.

AUTOMOBILE PHOTOS—of the world's finest cars & coachwork, American & Continental, of the classical era. Not snapshots. Listings 25c. G. A. Moffitt, 306 W. 94th St., New York 25.

MOTOR & MOTORCYCLE BOOKS—handbooks, shop manuals, maintenance, repair, tuning, racing, rallies, antiques, classics, histories; catalog 25c. Vivian Gray, The Motorist's Bookseller, Hurstpierpoint, Sussex, England.

SIDEMOUNT TIRE MIRRORS. Brand-new, fully adjustable to fit all sizes of tires & wheels; chrome-plated over brass & nickel. Complete with necessary locks & keys. \$35 pr., prepaid & insured. A. Ward Shanan, 2444 S. Orkney St., Philadelphia 48, Pa.

PHOTOGRAPHS of the world's greatest motor cars. Double-weight, 11" x 14" glossies. 12 for \$15, prepaid & insured. Set of Duesenberg specification sheets & orphan car parts directory included free with every order. A. Ward Shanan, 2444 S. Orkney St., Philadelphia 48, Pa.

'30 PIERCE-ARROW conv. cpe. Orig. & complete, except trunk. \$900. Tony Canino, 2405 Santa Paula, Las Vegas, Nev. Phone DU 4-7079.

'31 CHEVROLET sp. cpe. with rumbleseat. Tires & engine exc.; body & interior in very fine shape. Drive it anywhere. Best offer over \$400. David Funk, 310 Valentine Hall, Amherst College, Amherst, Mass.

'27 MODEL T 2-dr. sed. Orig. thruout; uph. like new, paint fair. Good running order, except radiator has slight leak & bands need adjusting; tires good. New bands, spindles, rings & gaskets included. \$450 or best offer. John P. Waga, Phillips, Wis.

'36 PACKARD 120 8-cyl. conv. cpe. Black with white top, covered sidemounts. Body, top, chrome & running gear in exc. cond.; needs engine work. Make offer. D. A. Carlson, 424 Chestnut St., Fredonia, N.Y.

'39 LINCOLN K V-12 7-pass. sed. Alum. body, sidemounts. Just painted & in exc. shape; 18,000 actual mi. \$1300. Arnold Klansen, 1436 Bayard Ave., St. Paul 16, Minn. Phone MI 8-2247.

'37 PACKARD 6 cpe. in exc. cond. 14,000 actual mi.; needs paint only. \$350. Arnold Klansen, 1436 Bayard Ave., St. Paul 16, Minn. Phone MI 8-2247.

'48 LINCOLN CONTINENTAL V-12 conv. New top & wws; leather interior, r & h, o.d. Defroster

continued on page 86

FREE!
1959 CATALOG
sent FREE with order for
any item from this ad
(otherwise send only 25¢
to cover mailing.)

NEW GIANT CATALOG

Thousands upon thousands of 1959 accessories from our stock of over 150,000 items. Most not available in regular Auto Parts Stores. Lowest prices in our history. Order your catalog today.

SAVE NOW . . . ORDER THESE ITEMS TODAY



"AUTO-TIMER" Timing Selector. Get more POWER, up to 20% MORE gas mileage, quicker starting. Adjust spark instantly from your dash for all driving conditions. Triple chromed. Only \$8.95 postpaid. Great item.



OIL SAVER

"PERMA-BRONZE" Filter lasts FOREVER. (Rinse and it's like new). SAVE MONEY . . . oil lasts LONGER, engine lasts longer. By-Pass element \$4.95. Full-Flow \$8.95. Complete Filter (with case) \$12.95 postpaid.



NEW CHROME KITS \$4.95

POROUS BRONZE OIL FILTER

"INSTANT-CHROME" plate anything. Sensational invention, gleaming surface easily applied to rusty bumpers, trim, plumbing fixtures, etc. No need to remove trim for replating. \$4.95 complete, postpaid.

TREMENDOUS VOLUME MAKES POSSIBLE THE LOW NEWHOUSE PRICES

49¢
GENUINE "CHAMPION," "A.C.," "AUTO LITE," SPARK PLUGS, guaranteed 10,000 miles! Remanufactured, your Favorite Brand, sets of 8 \$3.92. Amazing offer . . . they're so GOOD send \$1, pay balance 30 days. Postpaid.

NEWHOUSE GLASS-PACK MUFFLERS . . . Now only \$5.98 to \$8.68 FOR ALL CARS. Outlast THREE stock mufflers. Send \$2.00 deposit, balance C.O.D. EXHAUST "CUT-OUT" \$3.75. "BY-PASS" \$7.50. Dash controlled.

MAGNESIUM ROCKER ARMS Light, NO "float" at full RPM. High valve LIFT, equal to 3/4-race cam. Install them yourself, easily. Chev 6, GMC, OHV Ford 6 \$30.75; OHV Ford V-8, Olds, Cad, Merc, Stude, \$33.75 set.

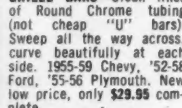
READ BOTH HOUSE AND AUTO voltages with T-K-30 TESTER. Sensitive ohmmeter instantly spots bad switches, shorts, faulty contacts. AC-DC 0-750 volts; DC 0-150 milliamperes; resistance 0-100,000 ohms. Only \$12.95 ppd.

CARBURETOR ADAPTERS — Install bigger carb for more POWER, or smaller carb for greater ECONOMY. 2 bolt X 3 bolt \$2.89; 2 1/2 \$2.95; 3x4 (shown) \$3.95; 4xQuad \$5.95; Wide Base Adapter \$4.95. Postpaid.

TAYLOR ALTIMETER . . . great for trips . . . How "steep" the hills, how deep the valleys. Also Barometer. Complete . . . no wires to connect. 0-5000 ft. \$9.95; 0-10,000 or 0-15,000 ft. \$10.95 postpaid.



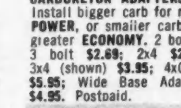
FENDER SKIRTS SALE . . . NEW flush-mounted, inside fit . . . Ford, Mercury, Plymouth, \$8.95 pair. Most other cars \$11.95. "FULL-SWEEP" Skirts (with chrome bead) nearly ALL cars, only \$24.95 pair. Perfect fit.



GRILLE BARS—Clean lines of Round Chrome tubing (not cheap "U" bars). Sweep all the way across, curve beautifully at each side. 1955-59 Chevy, '52-58 Ford, '55-56 Plymouth. New low price, only \$29.95 complete.



TAYLOR ALTIMETER . . . great for trips . . . How "steep" the hills, how deep the valleys. Also Barometer. Complete . . . no wires to connect. 0-5000 ft. \$9.95; 0-10,000 or 0-15,000 ft. \$10.95 postpaid.



CARBURETOR ADAPTERS — Install bigger carb for more POWER, or smaller carb for greater ECONOMY. 2 bolt X 3 bolt \$2.89; 2 1/2 \$2.95; 3x4 (shown) \$3.95; 4xQuad \$5.95; Wide Base Adapter \$4.95. Postpaid.

WE SHIP ALL OVER THE WORLD

Newhouse AUTOMOTIVE INDUSTRIES
WE SHIP ALL OVER THE WORLD

LOW MAIL ORDER PRICES
SATISFACTION GUARANTEED OR YOUR MONEY BACK.

5805 E. Beverly Blvd., Dept. 139, Los Angeles 22, Calif. RA 3-3671
ORDER BY MAIL TODAY! Send currency, check or money order and save C.O.D. fees. 20% deposit required on C.O.D.'s (no C.O.D.'s outside U.S.A.). Calif. customers add 4% Sales Tax.

Car Make, Model . . . Year . . . Cyl. . . \$
Name . . . Full Price Enclosed \$
Address . . . 20% Deposit. Send C.O.D. \$
City . . . Zone . . . State . . .

QUANTITY	ITEM—Description—GIVE FULL INFO	PRICE

1959 CATALOG—FREE with order (otherwise send 25¢ for postage).

WORLD'S LARGEST SUPPLIER OF SPECIAL AUTO PARTS
Headers, Manifolds, Engine Adapters, Chrome Side Pipes, Mufflers, Cams, Carburetors, Superchargers, Ignitions, Chrome Accessories, Pistons, Rings, Gauges, Clutches, etc.

Meet the exciting TREND CAR BOOK LINE for '59!

1959 HOT ROD ANNUAL

This year's edition of this ever-popular favorite is a "Space Age Special." The accent is on years-ahead thinking in hot rodding, from George Barris' futuristic "World's Most Beautiful Roadster" to the Space Age Rod Roundup, a photo gallery of the sharpest hot rods in America. And blasting off with plenty of rocket-paced reading are such aces as Huntington, Navarro, Francisco, Potter and many other stars in the hot rod galaxy, who bring you features like High-Performance Competition Engines, Hottest Cars of the Year, Racing Tire Problems and the Cast of Hot Rodding Your Car.



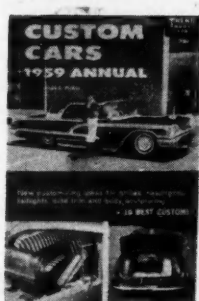
CUSTOM SHOW CARS

Presenting: the pick of the show customs, created by America's top customizers. Author George Barris reveals how he wins top trophies at the big shows, also blends present with future in "Space Styled Customs." You'll go for his chapters on "Sketch-Pad Styling," "Customizing with Paint," "Pickups on Parade" and "Tricks with Fabric." This idea-crammed text also covers all the latest angles: tubular crilles, dummy spotlights, bolt-on taillights, chrome tape, bolt-on headlight rims, hubcap designing, Merc fender skirts. Sections on restyling '57 Fords and classic T-Birds complete the exciting picture.



1959 CUSTOM CARS ANNUAL

Bursting with ideas galore, it's the best edition yet of this outstanding customizer's handbook. You'll find scores of up-to-the-minute, photo-illustrated "brainstorms" on scoops, quad lights, taillights, hubcaps, interiors, accessories, Fiberglas, etc. If painting's your pleasure, you'll want to read the big Spray Gun Section that shows you how to handle various paint mixtures, unusual paint schemes, scalloping. Plenty of tips from experts, too, such as Bailen, Barris, Emory, Ayala. Plus the Giant Pictorial Roundup, featuring hundreds of shots of the finest in American customs, many NEVER BEFORE PUBLISHED!



1959 CARS OF THE WORLD

The "extras" make the difference in the latest edition of this popular annual. Not only does it present complete facts on every production car built for 1959, but you also get such bonus features as a special section devoted exclusively to station wagons; full data on prices, both factory and port of entry; detailed engine close-ups; an expert's prediction of future world-wide trends in styling. This informative guide contains photos and specifications on over 200 models from all nations, cars of every type: family cars; sportscars; economy and luxury makes; Gran Turismos.

only **75c**
each at newsstands now!
(or mail coupon today!)

TREND BOOKS
5959 Hollywood Blvd.,
Los Angeles 28, Calif.

Enclosed is \$_____ @ 85c each (covers postage, etc.) Send:

☐ 1959 HOT ROD ANN.—TB 176 ☐ 1959 CUSTOM CARS ANN.—TB 175
☐ CUSTOM SHOW-CARS—TB 181 ☐ 1959 CARS OF THE WORLD—TB 182

Name _____
Address _____
City _____ Zone _____ State _____

COLD ON THE DESERT
COLD IN TRAFFIC

Cold Anywhere

IT'S 

ARTIC-KAR!

for ALL AMERICAN CARS
43 FOREIGN CARS & SPORTS CARS

New LOW Prices

5 MODELS TO CHOOSE FROM. SEE YOUR LOCAL ARTIC-KAR DEALER for Full Information and Demonstration Ride.

ARTIC-KAR AIR CONDITIONERS ARE A PRODUCT OF CAPITAL REFRIGERATION, INC.
3922 KALLOCH DRIVE, DALLAS 16, TEXAS. FR 1-3471

EXCLUSIVE PLUS FEATURE!

You get it only in the Model 50

ELECTRO TACH

WORKS ON ANY 6 or 8 CYL. CAR

6 or 12 volts or magnet

That's right! The Model 50 is your next car too, gives extra years of service yet costs less than any other top quality tach! Professional accuracy always. No fluctuation with battery voltage. Steady needle. Instant readability. Compact, easy to install. For split-second shifting by the tach, for sharp engine tune-up, see your ElectroTach dealer. If none near you send check or M.O. Ppd. only \$42.50

Also available: Economy model and magnetic-base Portable. Catalog, FREE booklet on tach use.
DIXSON PRODUCTS CO., Dept. C-5 VASHON, WASH.

WELD · BRAZE · SOLDER · CUT

REPAIR MOST EVERYTHING MADE OF METAL

Home Appliances, Auto parts, Farm garden equipment, toys, Make and repair playground equipment, lawn chairs, tables, ornamental iron work, gates, etc., wagons, etc.

 Solder, heat, bend, and straighten with terrific heat from arc torch. Cut and weld up to 1/4" steel plate. A million uses for home, auto, farm, inventors, factories, etc. Works from any 110 volt plug-in. Complete with dark welder's mask, arc torch, supply of welding and brazing rods. Solder, flux, and complete welding instruction book. Attractive—portable—efficient—durable—1 year guarantee. Wt. only 4 lbs.

SEND ONLY \$3.00 (cash, ck. mo) and pay postman \$9.95 plus CDD postage on arrival or send \$12.95 and we will send postpaid. Ideal gift for mechanically minded home owners, relatives, friends. Order now for early delivery. Available only from
MIDWAY WELDER Dept. DAG-8, Kearney, Neb.

TIPS FOR CAR OWNERS

That Will Save You Money

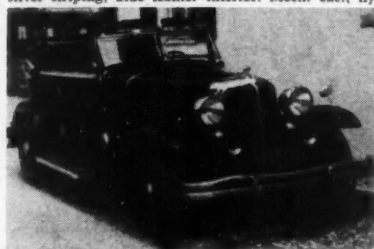
Want to cut your repair bills? Operating costs? Service your own car? Get better mileage? These are but a few of the many subjects discussed in our 192-page "Car Owner's Handbook" No. 600, just out. It's a real "how-to" manual every car owner needs. At newsstands, 75c; or order from:
SCIENCE & MECHANICS, 450 E. Ohio St., Dept. 202 Chicago 11, IL



\$ELL 'N' SWAP

continued

& power equip't all in good working order. Asking \$900. Paul E. Rikert, 36 Highland St., Canton, Mass. DENMAN "HANDCRAFTED" whitewall tires. Custom-built, brand-new; 6-ply rayon, heavy-duty. 7.00 x 17, \$40 ea.; 7.50 x 17, \$45 ea. Other sizes available for most classics & special interest cars. A. Ward Shanan, 2444 S. Orkney St., Philadelphia 48, Pa. '33 CHRYSLER 8-cyl. 4-dr. conv. Orig. black with silver striping, blue leather interior. Mech. exc.; hydraulic brakes, free wheeling, other extras. Airmail Pfc. P. S. Fleck, Hq & Svc Co., 320 USASA Bn., APO 108, New York.

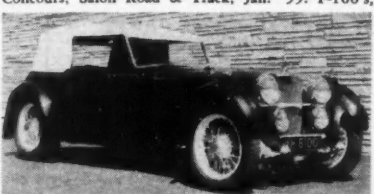


ORIGINAL CATALOGS on Packard, Cadillac, Lincoln, Chrysler, Auburn, Stutz, Cord, Marmon, etc. All classics 1925 thru '42. Motor (N.Y.) Annual Show Numbers & monthlies 1925 thru '42. Complete listing 35c. Sheldon J. Lewis, 61-33 213th St., Bayside, L. I., N. Y.

'38 LA SALLE Fleetwood conv. rdstr. One-of-a-kind, built for GM exhibit 1939 World's Fair. Alum. racing engine. Restored to showroom cond. \$1250 or best offer. Color pix & specs \$1. Sheldon J. Lewis, 61-33 213th St., Bayside, L. I., N. Y.

BRAND-NEW, UNUSUAL motor car accessories & gadgets of all kinds. Chrome-plated engine & chassis parts, etc. Complete price lists, catalogs & full descriptive literature \$2. A. Ward Shanan, 2444 S. Orkney St., Philadelphia 48, Pa.

'32 ALVIS Speed 20 4-place tourer. 1st prize '58 Concours; Salon Road & Track, Jan. '59. P-100's,



wire knockoffs, cycle fenders; all-alum. Make offer. Bill Hellie, 2040 Evergreen, Salem, Ore.

CORD 810-12 NEW PARTS: ventilated hubcaps, rollers/pins, adjusting screws; transmission gears; helicals, low-reverse (sets only); shiftforks, 47:10 ring/pinions, selector shiftcases. Auburn-Cord-Duesenberg Club Projects, 414 Emmons Blvd., Wyandotte, Mich. Phone Avenue 5-9249.

'40 BUICK Century 4-dr. conv. phaeton. Orig. black finish, red leather uph. Exc. running cond.; new 8.20 x 15 tires. Best offer over \$1500. James Pinney, 1439 Grand Ave., Saint Paul 5, Minn.

'37 CHRYSLER Airflow 4-dr. sed. Body perf. & complete; orig. black paint unusually good. Recently hauled & ready to go anywhere. Good 7.60 x 16's. Must sell; asking \$650. R. B. Duncan, 603 Linwood St., New Cumberland, Pa.

'38 MG-TA rdstr. New black lacquer, red leather, white top, tonneau, chrome, brakes, Dunlops, water pump. Rt-hand drive. First 1958 Concours. Make offer. Bill Hellie, 2040 Evergreen, Salem, Ore.

'41 LINCOLN Continental cabriolet, with modified 48 Merc engine. New 8-coat lacquer in orig. midnight blue. Top, uph., tires all good. \$950. W. Hughes, Rt. 1, Box 54, Hughton, Calif.

'29 ROLLS-ROYCE Phantom I cabriolet, with Kellner body. Exc. cond.; 5 good tires. New York State inspected '58; drive anywhere. \$1500. J. Case Tilden, Box 188, Franklinville, N.Y.

'06 BUICK model 'F' in restorable cond. Priced at \$1500 for quick sale. Robert J. Bower, Brook, Ind. Phone BR 5-6723.

'27 DIANA '8" sed. Partly restored—runs like new. Best offer over \$300. O. Fitzgerald, 53 3rd Ave., Ottawa, Ont., Canada.

'37 ALVIS Speed 25 tourer. Rare beauty for daily use & touring. Exc. cond. thruout; fastidious will want new paint. \$4500; deliver anywhere for expenses. Bard Crocker, P.O. Box 595, Bon Air, Va.

'40 ALVIS Speed 25 speedster—last Speed 25 made. Minor fender work needed; paint is drab—exc. otherwise. Unusual, rare. \$3500; deliver anywhere for expenses. Ballard Crocker, P.O. Box 595, Bon Air, Va.

'31 PIERCE-ARROW cpe. in good running cond. Good tires, no body rust; needs a little chromework. Drive anywhere. Best offer over \$400. Jack D. Stevenson, 736 Cassell St., Winston-Salem, N.C.

'05 CADILLAC & '05 Maxwell—\$3500 each. '24 Ford rdstr. & '26 Ford touring with forward transmission—\$1500 each. All cars are perfectly, com-

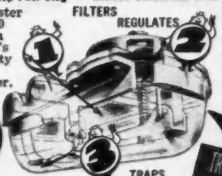
CURE THAT GAS EATER

with triple-action
MILESMASTER

Mail Coupon for free pamphlet: "THE TRUTH about FUEL PRESSURE REGULATORS" Authoritative engineering answers explain why over a MILLION installed in cars and fleets to save 15 mpg including:

Save up to 20% on Gas • Stop Stalling, Vapor Lock, Flooding
Stop Rough Idling • Stop Hard Starts, Jerky Acceleration
Improve Filtration, Stop Fuel Clog • Reduce Carburetor Wear
Insist on Milesmaster
—get up to 36 to 40
EXTRA miles in a tankful of gas! It's the "3-in-1" quality Leadership Fuel Pressure Regulator.

MONEY BACK \$695 GUARANTEE



For free "TRUTH" Pamphlet, mail this coupon with your name and address in margin. No obligation. Sold only at retail through 40,000 auto service outlets on Money Back Guarantee. Milesmaster, Inc., Dept. 184 1550 East 74th Place, Chicago 19, Illinois.

GUNK-it-yourself!

Gunk® G.P. removes grease from engines or concrete floors; cleans paint brushes, power mowers, or machinery completely, economically & safely. It's ready-to-use, rinses off with water, won't clog drains. Quart size with handy "Squirt Spout" top speeds application. Insist on the best degreaser—the original "GUNK" at better automotive supply and hardware retailers everywhere. • REG. TRADE MARK.



GUNK CHICAGO CO., River Forest, Illinois
RADIATOR SPECIALTY CO., Charlotte, No. Carolina
Serving the East, Southeast and Far West

MUFFLER SHOT AGAIN?

Replace it this time with a long-lasting . . .

Porter

Porter Mufflers are road tested for 50,000 miles before being offered to the public. Order today or write to Porter Muffler Mfg. Co. Dept. MT-5 for name of your nearest dealer.

PORTER MUFFLER MFG. CO., Inc.

11820 W. Olympic Blvd., Los Angeles 64, Calif.

NEW AUXILIARY PULLEY



\$5.95 LIST

provides power take-off from your car engine for: Ham radio generators, 110 v AC generators, air compressors, pumps, sirens, and . . .

FITS (without drilling or machine work)
Chevrolet 55-59; Ford, Lincoln, Edsel, Mercury 55-59; GMC 1/2 and 3/4 ton trucks 55-59; Buick 51-59; Pontiac 55-59; Plymouth and Dodge 57; DeSoto and Chrysler 57-58; Nash Rambler Model 01 58-59.

Send check or money order

TRACTION-MASTER CO., 2917 W. Olympic, Los Angeles 6, Calif.

The NEW

LATHAM
Airt Flow
Supercharger

Send \$2.00 to Dept. MT for complete supercharging information plus LATHAM Decal.

Name Your Engine

1ST AT DAYTONA 2 YRS. IN A ROW

LATHAM MANUFACTURING CO.
Box 165 West Palm Beach, Fla.

MOTOR TREND/MAY 1959 87

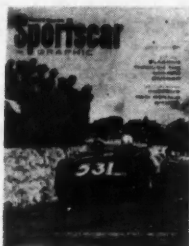
FIRST WINNERS

of the
"project ideas"
contest!

...in
June
MOTOR
TREND
on
sale
May 19!

ALSO: "GETTING MORE GO" THRU
MULTIPLE CARBURETION
BIG PARADE OF ROAD TESTS
& LATEST ACCESSORIES

JUNE



ON
SALE
NOW!

BLASTING THE
400 -MPH
BARRIER

WHERE ARE TOMORROW'S
DRIVERS?

THE **MILLE MIGLIA**
—WORLD'S
TOUGHEST
100 MILES

SPECIAL INTRODUCTORY OFFER!

5

Issues of **MOTOR
TREND**
for only
\$1

SPECIAL FEATURES • NEWS • ROAD TESTS
NEW PRODUCT SECTION • CUSTOMS • CLASSICS • MOTOR SPORTS

CLIP COUPON AND MAIL IN YOUR SUBSCRIPTION TODAY!

MOTOR TREND 5959 Hollywood Blvd., Los Angeles 28, Calif.

Here's my dollar. Send me your big **5** offer of
the next five issues of **MOTOR TREND**.

(please
print)

NAME

ADDRESS

CITY

ZONE STATE

88 MOTOR TREND/MAY 1959

SELL 'N' SWAP

continued

ly restored 3000 mi. ago. New (not rebuilt) V-12, 17 coats bronze lacquer. Consistent prize winner, grand classic—exc. show car, \$2950. Joseph B. Virotek, 5585 South Blvd., Maple Heights, Ohio. Phone MOntrose 2-7172.

'29 GRAHAM-PAIGE cpe. 6 wire wheels, side-mounts, owner's manual. Driven daily. Best offer over \$250. Ralph H. Hoss, 917 N. Evergreen, Amarillo, Tex.

'18 HUDSON 6-cyl. 7-pass. touring sed. No. M 5855. Very good cond.; needs tires. Asking \$985. Mrs. Nelly Van Arkel, Box 1224, East Ave., Livermore, Calif.

ROLLS-ROYCE Phantom II with postwar conv. body. Brought from England in '58. New tires, hood, carpets, etc. Offered for \$3750. C. B. Jayne, R.R. 1, Sidney, Vancouver Island, B.C., Canada.

SELL OR SWAP

'37 FORD-CHAMPION fire truck. Low mileage, exc. cond. Includes 500-gal./min. pump, hoses, ladders, sirens, lights. \$1200 or trade. Will deliver. Mishawaka Jaycees, c/o Bob Summers, 1811 E. Irvington, South Bend 14, Ind.

'31 CADILLAC V-12 sed. Complete, orig., good cond., partly restored, plus parts car, \$750, or consider trade restorable steamer or '30 Cad V-12 or V-16. Earl Deakins, 3501 Westward Blvd., Phoenix, Ariz.

'27 AUSTRO-DAIMLER Model ADM 6-cyl., 261 cc 4-dr. sed. Alum. ohc engine, Rudge-Whitworth knockoff racing wheels, twin carbs, Bosch starter. Trade for '55-'57 Alfa Romeo Giulietta, Lancia sports



or Fiat sports under 1500cc. Prof. Naoyasu Sata, Faculty of Science, Osaka University, Nakanoshima, Osaka, Japan.

'25 STUDEBAKER Standard 6 2-dr. sed. 95% orig.; exc. rubber. \$500 or swap for 28-ft. or larger house trailer with tandems. Buff's DX Service, Box 64, Mayer, Minn. Phone 461.

'31 LINCOLN LeBaron conv. rdstr. Good body, tires; fair engine; poor top, uph., chrome. Will accept any reasonable offer or swap sports car or Cord. George T. Smith, 84 Wheeler St., Winsted, Conn.

WANTED

CORD 810-12 TRANSMISSION CASE machining prints sought by Auburn-Cord-Duesenberg Club. Perhaps former personnel from Lycoming, Warren Gear or Auburn can help. Any lead welcomed. ACD Club Cord Projects, 414 Emmons Blvd., Wyandotte, Mich. Phone AVenue 5-9249.

'40 THRU '49 CHRYSLER PRODUCT—prefer Dodge. Must be in perf. cond. Write full details 1st letter. Franklin Poe, 74 Edgemoor Rd., Wilmington 2, Del.

VIKING in reasonable restorable cond. Built by Olds Motor Works 1929. '30. Suitable reward will be paid for info leading to this car. Paul D. Hileman, 2441 S. Oak Knoll, San Marino 9, Calif.

'39 LINCOLN Zephyr cpe. Body must be in good cond.—no wrecks, please. Prefer Texas area. State price & cond. 1st letter. All pix returned. Lt. Brad E. Tichy, Box 883, Laredo AFB, Tex.

RAG TOP for '55 Thunderbird—ready to install. Cond. of fabric not too important, but frame must be perf. Give best cash price. Josh Lee, 4400 Edgemere, North Little Rock, Ark.

AUTOMOBILE CATALOGS. Top prices paid for classic material—Cadillac, Packard, Lincoln, Auburn, Duesenberg, Stutz, Marmon, Pierce-Arrow, etc. Also Motor (N.Y.) Annual Show numbers. Will pay any offer. Sheldon J. Lewis, 61-33 213th St., Bay side, L.I., N.Y.

'38 PACKARD 8 PISTON— $\frac{3}{16}$ bore, 20,000 oversized, 30,000 will do. Standard will not fit. Advise price. C. Sharheart, 310 Avondale, Houston, Tex.

'02-'41 CADILLAC—restorable or parts. Making Cadillac collection. All letters answered; will pay for usable lead. Capt. M. B. Hembel, 2605 Patrick Ave., Maryville, Tenn.

AUTOMOBILE LITERATURE—classic, antique, pre-war catalogs. Packard, Peerless, Pierce-Arrow, Auburn, Rolls-Royce. Buy all other makes built, & will pay the most dollars. Send your list. Lewis A. Mayer, Munich, Mich.

'49 CHRYSLER 8-cyl. Town & Country conv. Body must be good; need not be running. All leads appreciated. Consider trade. Don Syren, R.D. #2, Box 100, Moscow, Pa. Phone VICTOR 2-8386.

Save

Tell Me

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

Model 8

GERMAN MADE

Germany's popular precision-built car, Opel offers refinements unique in a car priced as low as this one. It's a practical family-size, economical small car import with American big-car ideas.



AMERICAN STYLE

You'll be amazed that any small car import could let you enjoy so much roominess, so much space to store things, so much big-car feel. Get Opel's illustrated brochure at your Buick Dealer's.



THIS IS OPEL

Up to 30 miles per gallon. Seats 4-5 . . . over 12 cu. ft. luggage space. 56 horsepower, 4-cyl. engine. 174 in. long, a little over 5 feet wide. Opel Rekord 2-door sedan, MANUFACTURER'S SUGGESTED RETAIL PRICE \$1987.50 P.O.E. New York*. Also available: Caravan station wagon.

*Including heater, defroster, turn indicators, delivery, handling, Fed. excise taxes.) Transportation charges, state, local taxes, accessories and opt. equipment inc. whitewall tires additional.

THE BIG SMALL CAR BUILT IN GERMANY BY GENERAL MOTORS—SOLD AND SERVICED ALL OVER AMERICA BY

BUICK DEALERS

90 MOTOR TREND/MAY 1959

MT ADVERTISERS INDEX

Almquist Engineering	79
American Technical Society.....	87
Bardahl	82
Best Car Buys.....	73
Book-of-the-Month-Club (RCA)	3
Ray Brown Automotive	79
Capitol Refrigeration	86
Car Skin Products	84
Cars and Parts.....	80
Chevrolet Motor	10
Citroen Cars Corp. (Dyna Panhard).....	7
Citroen Cars	52
Crazy Painters	79
Arnold Dain Corp.....	87
Harley Davidson Motor Corp.....	78
Develex	87
Dixson Products	86
Fadex (NSU Prinz).....	16
R.D. Fageol Co.....	87
Fellman, Ltd.	87
Fenton Mfg. Co.....	74, 75
Foxcroft	84
Goerlich's	70
B/F Goodrich	7
Gunk Laboratories	86
Harwill, Inc.	80
Heath Co.	53
Hedman Muffler	6
Holmes Tuttle Ford.....	80
Honest Charley Speed Shop.....	81
Infra Red Auto.....	80
Inland Mfg. Co.....	80
Johns Mfg. Co.....	65, 66, 67
Johnson Accessory Co.....	87
Kaskels	87
Kendall Refining Co.....	4
King Trailer	79
Latham Mfg.	86
Liggett & Myers Tobacco.....	Cover 4
Lodge Spark Plug Co.....	80
Mercedes Benz	Cover 3
Midway Welder Co.....	86
Milesmaster, Inc.	86
Mono-Flex	74
National Schools	5
Newhouse Automotive	85
Robert E. Olson Co.....	87
Opel Division	90
Paser Mfg. Co.	63
Pontiac	Cover 2
Porter Muffler	86
Pure Oil Co.....	77
Radiator Specialty Co.....	80
Ramcote	74
Raybestos Division	78
Science & Mechanics Magazine.....	86
Stadri	87
Steen Lubricants	74
Stewart Warner Corp.....	8
Studebaker	58
Tidewater	9
Traction Master	86
Victress Mfg.	80
Warn Manufacturing Co.....	80
Wynn Oil	72
J. C. Whitney	71, 89

Gottlieb
will be
an ac
to the
the ha
not "t
years



SUBLIME STAR

WHERE DID IT COME FROM?

Gottlieb Daimler once said, referring to a star on his house, "A star shall arise from here, and I hope that it will bring blessings to us and to our children." A few years later his first gasoline-powered vehicle became an actuality. In 1901 it was named the Mercedes. And in 1909, the star was adopted as its insignia in tribute to the founder of the firm. Now, in 1959, half a century later, the three-pointed star of Mercedes-Benz is the hallmark of excellence on the roads of the world. But the blessings of which Gottlieb Daimler spoke go not "to our children" but to every owner of a Mercedes-Benz. These people are the beneficiaries of over 70 years' work to build the perfect automobile, the car of connoisseurs.

Mercedes-Benz Sales, Inc. (A Subsidiary of Studebaker-Packard Corporation)

♪
They said it couldn't
♪ be done... ♪
They said nobody
could do it...
but —

L&M is
Low
in tar

with
More
taste to it

Don't settle for one without the other!



"L&M is kindest to your taste because L&M combines the two essentials of modern smoking," says TV's Jack Lescoulie.

LOW TAR: L&M's patented filtering process adds extra filter fibers electrostatically, crosswise to the stream of smoke... makes L&M truly *low* in tar.

MORE TASTE: L&M's rich mixture of slow-burning tobaccos brings you *more* exciting taste than any other cigarette.

LIVE MODERN — CHANGE TO MODERN L&M

©1959 LIGGETT & MYERS TOBACCO COMPANY

COMPANY

the

cro-

tar.

you

M